European Skyways

Lowell Thomas

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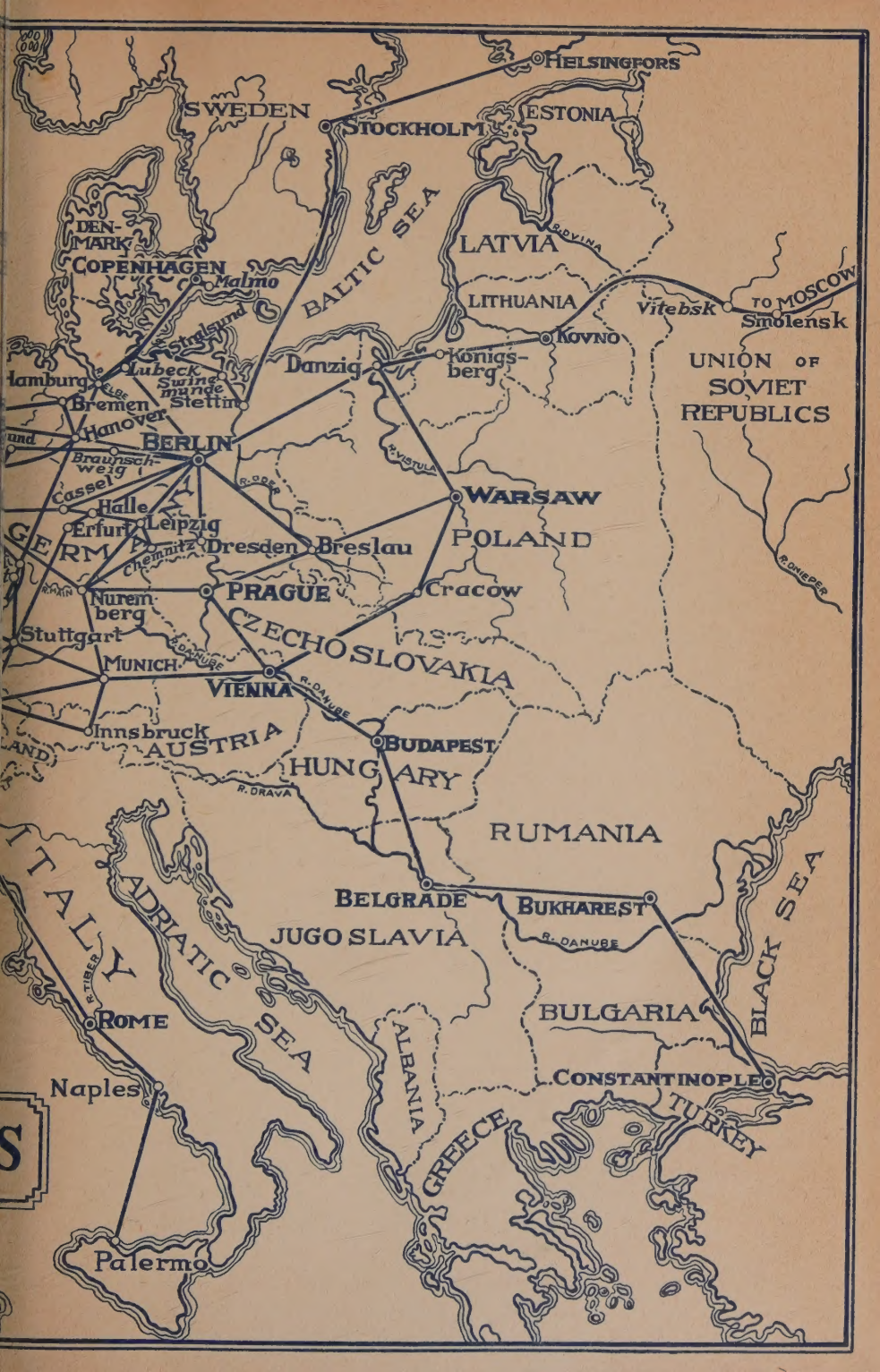
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UNION OF SOVIET REPUBLICS
Hamburg
Lubeck
Swine munde
Stettin
Bremen
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Halle
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Leipzig
Chemnitz
Dresden
Breslau
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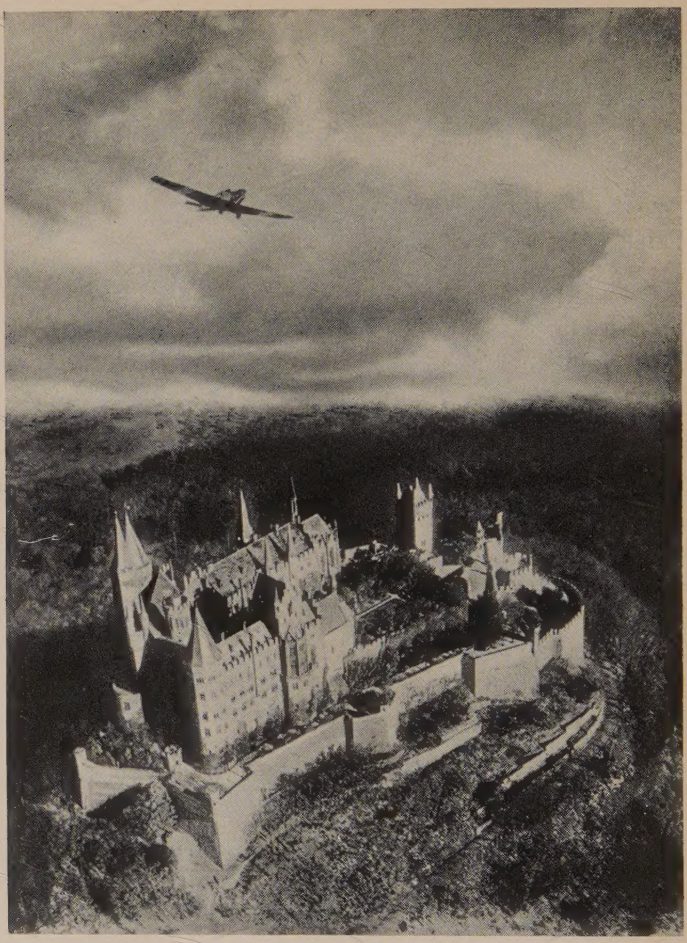
EUROPEAN SKYWAYS



CASTLES FROM THE AIR

EUROPEAN SKYWAYS

The Story of a Tour of Europe by Airplane

BY

LOWELL THOMAS

Author of 'With Lawrence in Arabia,' 'Beyond Khyber Pass,' and 'The First World Flight'

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TO ALL
WHO HAVE MISSED THE JOYS
OF FLIGHT

74081

CONTENTS

I. We Sail to See Europe from the Sky 1

II. Croydon — Britain's Liverpool of the Air 29

III. Across Kent to the Land of Windmills 46

IV. In the Cockpit to Amsterdam 61

V. A Sir Francis Drake of the Air 75

VI. Battle-Fields of Earth and Sky 91

VII. Riders of the Flaming Coffin 119

VIII. Up the Marne to Saint-Mihiel — An Arizona Playboy of the Skies 146

IX. An American Knight of the Air 168

X. A Night Flight up the Rhine to Switzerland 181

XI. Looking down on the Alps from the Sky 200

XII. Jumping Meridians along the Danube 224

XIII. A Flying Baby and an Aërial Cure for Insomnia 240

XIV. Across the Transylvanian Alps to Bucharest 254

XV. Over the Black Sea to the Golden Horn 265

XVI. An Adventure with Fog above the Thuringian Forest 284

XVII. Through Midnight Skies on the Way to Russia 304

BETWEEN THE CITIES OF THE LOW COUNTRIES AND LONDON, BRUSSELS, PARIS, HAMBURG, AND COPENHAGEN 92

MYNHEER PLESMAN 93

THE AMSTERDAM–PARIS MORNING EXPRESS, OVER ROTTERDAM, WITH OUD LUIT TER ZEE NIEUWENHUIS AT THE STICK 96

WITH A SHORT RUN AND A JUMP WE LEAVE THE CANALS OF ROTTERDAM FOR THE BATTLE-FIELDS OF BELGIUM 97

CANADA'S WAR COMET: BISHOP, THE PILOT OF BLUE NOSE 112

OVER THE SHATTERED RUINS OF NOYON 113

THE LOUVRE 144

PLACE DE LA CONCORDE 145

NOTRE DAME AND THE ÎLE DE LA CITÉ 160

FRANK LUKE OF ARIZONA 161

EDDIE RICKENBACKER 176

TO ANY ONE FOND OF EERIE GRANDEUR LET ME RECOMMEND A FLIGHT ABOVE THE CLOUDS 177

FOR CENTURIES PEOPLE HAVE CLIMBED THESE MOUNTAINS TO ENJOY THE VIEW FROM ON HIGH 192

ON OUR RIGHT IS THE LOFTY CENTRAL ALPINE CHAIN OF SNOW-CAPPED, KNIFE-EDGE PEAKS 193

WHAT WOULD HANNIBAL HAVE SAID? 204

WE CIRCLE HIGHER AND HIGHER, GAINING ALTITUDE IN ORDER TO CONTINUE OUR GAME OF LEAP-FROG WITH THE ALPS 205

THAT BEAUTIFUL CASTLE OFF TO THE LEFT TELLS US THAT WE ARE FLYING OVER THE IDYLLIC PRINCIPALITY OF LIECHTENSTEIN 212

Speeding across the Peaks of the Tyrol at a Hundred Miles an Hour 213

Here We are with the Inn River Rushing Right up to Meet Us 220

We Have Enjoyed this Flight across the Alps so much that We could even Yodel a Bit Ourselves 221

Our Austrian Pilot Ready to Give Her the Gun for Our Take-Off from Vienna to Budapest 228

A German Sky Pilot Wigwags 'Hello' to Us as We Pass Each Other above the Plains of Hungary 229

The World is Broken up into a Constantly Changing Pattern with More Colors than a Great Tapestry 256

A French Transcontinental Passenger Liner of the Air Crossing the Bleak Balkan Mountains 257

Farms and Villages, Rivers and Cities Scurry by with Such Speed that We are Unable to Count Them 272

Stamboul and the Golden Horn 273

Our First Glimpse of Leipzig and Its Massive War Memorial was a Welcome Sight 304

Tempelhoferfeld: One of the Finest Sky Harbors in the World 305

After a Night Flight above a Fairy Ballroom Floor We Make a Stop at Danzig on Our Way to Red Russia 320

The Flying-Field at Kovno, the Capital of Lithuania 321

With Blinds Drawn We Descend onto Our First Bolshevik Aerodrome 356

Plunging through the Storm Clouds We Emerge above the Moscow River and Slide Past the Red Square and the Somber Walls of the Kremlin 357

The World of Mountains, Islands, and Tumbling Continents of Clouds 388

We Circle Fluffy Peaks Loftier than Everest 389

Planes Leave Moscow on Regular Schedule for the Ukraine, the Black Sea, and the Far-Off Borders of the Caspian 396

In the Gulf of Finland We Fly by a Barren Rock behind Which the Fleet of the Czar Once Rode at Anchor 397

The Latest Sport in Finland: Skiing by Airplane 397

We Pass a Fleet of Sailing Boats Bucking the Ice 416

We Leave the Land of the Finns by the Sky Route above the Frozen Gulf 416

Two Hours and a Half after Leaving Helsingfors, Finland, We Arrive over Stockholm 417

We Fly Low over Stockholm 432

Our Most Comfortable Air Voyage was in this Big Dornier-Wal Flying-Boat from Sweden across the Baltic 433

A Rare Sight and a Happy Omen is the Shadow of Your Plane Racing with You Far Below 433

Although You Travel Many a Mile in Any Direction, You Still See the Famous Twin Spires of the Cathedral of Cologne 454

In a Giant All-Metal, Three-Engined Pullman Liner of the Air My Wife and I Wing Our Way from Berlin to Paris 455
From Castle to Castle We Follow the Winding Course of the Romantic Rhine 458
The Ghost-Like Domes of Sacré Cœur are the Last Bit of Paris That We See 459
At Avignon, above the Walls and Bastions of the Popes 474
Near the Castle of Tarascon We Leave the Rhone 475
Aigues-Mortes: The Most Perfect Mediæval Walled Town in all Europe 500
Our Flight to Africa Ends Abruptly at the Foot of the Sierra Nevada in Andalusia 501
Our Last Hop: From Paris back to London 508
The Fairy-Like Castle of Saint-Michel 509

EUROPEAN SKYWAYS

CHAPTER I

WE SAIL TO SEE EUROPE FROM THE SKY

Our plan seemed sheer lunacy to others, so we should have kept it to ourselves. But the third day out from New York one of us let it slip at dinner that we were on our way to see Europe from the sky; and that we intended to journey from London to Asia Minor; from Spain to Moscow; from the Riviera to Scandinavia, by airplane, without using train or ship.

I ought to be chivalrous and take the blame, but the truth is, my companion let the secret out. I had already done enough flying to think little of it. But she was almost as convinced as others that our adventure was hare-brained and foolhardy, so womanlike (?) she had to do her worrying out loud.

From then on we were regarded as the freaks of the liner. Two mad people off to 'do' Europe by air!

'How thrilling!' commented one blonde, shingled flapper. 'But aren't you afraid you'll bump into the Alps?'

'You're welcome,' gruffly observed a New York broker. 'I'd rather swim the Channel than fly it.'

'I'll let George do my flying,' said a motion-picture magnate, 'while I watch him from a safe and comfortable chair in a theater.'

'Sounds like a circus stunt. Have you left arrangements for your funeral?' ghoulishly joked a young professor on sabbatical leave.

Although they will all be traveling by air before long our fellow voyagers seemed about as eager to leave the ground as that darky poet laureate of Texas. After gazing wide-eyed at the cadets training for the Army Air Service, at Kelly Field, this timid colored gentleman expressed himself in no uncertain terms:

'Corse I ain't saying I won't do
Jes' what mah country want me to,
But dere's one job dat I foresee
Ain't gwine tuh 'tach itself tuh me.
Uh! Uh! not me!

Dat's dis hyah aihplane stuff — no, boss,
I'll beah some udder kind o' cross
Lak dribe a mule or tote a gun,
But I ain't flirtin' wid de sun.
Uh! Uh! not me!

If I mus' do a loop-de-loop,
It's gwine be roun' some chicken coop;
Not up yonder whar de crows
Kin say I'se trompin' on der toes.
Uh! Uh! not me!

EUROPE FROM THE AIR
A morning mist creeps over Edinburgh

A NEW VISIONARY WORLD UNFOLDS BEFORE THE EYE OF THE MODERN TRAVELER WHO HURRIES FROM CLOUD TO CLOUD

It shoh looks nice, I don't deny,
To go a-oozin' roun' de sky,
But dat's foh folks what's in de mood
To pass up luv, and gin and food.
Uh! Uh! not me!

Down heah I firs' seen light o' day,
Down heah is whar I'se gwine tuh stay.
Folks, I don't care to hab mah feet
Git too blamed proud to walk de street.
Uh! Uh! not me!

So I'll jes' wait till Gabriel brings
Dem good ole-fashun angel wings,
An' as I pass de aihplane by,
In pity I'll look down and sigh
UH! UH! NOT ME!

Everybody asked me why I was embarking on this dizzy jaunt. So a word of explanation may be in order. In the first place, my enthusiasm for high altitudes was developed early in life. For fourteen years I lived at an altitude of ten thousand feet on the rim of a prehistoric volcano. After my morning buckwheat cakes I strolled along to school, viewing the world each day from the lofty summit of the Rockies and taking as a matter of course the tumbling masses of clouds far below me.

But my real passion for flying dates back to that first flip in 1917, when Harry Chase, my photographer, and I were waiting for final word to join Allenby's army in the Judean Hills. While we were killing time in the Palace Hotel at Heliop-

olis, then serving as headquarters for the Royal Flying Corps, a South African invited us for an afternoon spin over Cairo and the Pyramids. It was Major Emmet, veteran hawk of the air, and descendant of Botha, the Boer, and Emmet, the Irish patriot, who initiated me, and on my first flight put me through all the then known acrobatic stunts of aviation.

When we got up a few thousand feet, I had the weird sensation that I was a spectator from another planet, astride a flying meteor, viewing the earth through a vista of thousands of years. As we circled over the Oasis of Heliopolis, I reconstructed the campus of the ancient University of On, where Pythagoras, Euclid, and Moses are said to have studied. And down there in the Land of Goshen, I seemed to see Joseph and Mary with their Child, resting under a tree in their flight from Herod.

From Heliopolis we raced across the sky toward the Nile and, as we approached the Pyramids, Emmet looped the loop right over the Sphinx and then side-slipped from several thousand feet to within a few yards of the tip of hoary old Cheops. After playing hide-and-seek with the venerable monuments for a dizzy half-hour, we whizzed back across the Nile to Cairo. As we climbed up and up into the blue, the massive Citadel, which Saladin had built with stones from the Pyramids, could hardly be distinguished from

the swarming bazaars of Cairo. At six thousand feet Emmet shut off the engine, and down we whirled in a spinning nose-dive. Even as we spun toward the earth with the revolving streets of Cairo rushing up to meet us, scenes from history went topsy-turvying through my whirling brain. I wondered if Joseph in his rainbow blazer was staring at us; if Moses and his brother Aaron were looking up in amazement at this twentieth-century miracle; and if Rameses, Cleopatra, and Mark Antony would be waiting to welcome us at the landing-field.

My second flight was even more spectacular. Yea, almost worth a year of my life. From the valley of the Nile we skimmed above the cotton-fields of Egypt and the sand-dunes of the Libyan Desert until we looked down on the man-made silvery streak that divides Africa from Asia. Then in forty minutes we sped from the Suez Canal across the Wilderness of Sinai, which it had taken Moses and the Israelites forty years to cross. On our left shimmered the dazzling blue Mediterranean. Off to the right tiptoed the mountains of Sinai. Below us stretched the narrow ribbon of desert road over which the armies of Thothmes, Sennacherib, Nebuchadnezzar, Saladin, Napoleon, and Allenby had marched — the oldest road in the world — the road down which Joseph and his brethren came. A few minutes later we were contemplating the ancient plains

of Philistia; the city of Gaza, where Samson was shorn of his locks; and Beersheba, home of Abraham and Lot. Every mile beneath us was mellowed by history. To add to the romance of the flight, we were looking down on the tents of Allenby's armies, who were waging the Last Crusade. Then, for a climax, we flew above the Judean Hills and, like Elijah in his fiery chariot, hovered over the Holy City and then landed on a hillside near Bethlehem where the shepherds were watching their flocks on that eventful night, nineteen hundred and twenty-seven Christmases ago.

It was a thrilling Pilgrim's Progress and converted me to the airplane as a vehicle from which to see the world unfold in panorama. My pilot on that flight was a Major Evans, whose escaping experiences in Central Europe during the World War included more thrills than I have heard of before or since. We will recross his trail and hear more about his harrowing escapades later on.

The third reason for my absorbing interest in aviation is, perhaps, the most important. It had been my good fortune to act as official historian of the first airplane flight around the world. Along the coast of Alaska; down the stormy Aleutian Islands; across Bering Sea to Japan; from Arctic to Tropic; over jungles and deserts; through the fogs of the Orkney and Faroë Islands; from Iceland to Greenland and Labrador — our army air-

men had winged their way through regions where aviators had never ventured.

So it seemed to me if men could circumnavigate the globe without even changing airplanes and live to tell the tale, surely flying was now safe enough to invite one's family to join on a tour of the organized airways of Europe. My wife accepted, in the spirit of a youngster who dislikes to funk a dare.

While on the Atlantic, we receive a radiogram telling that Marquis de Pinedo, the Italian flier, has landed in South America, thereby completing the trans-Atlantic leg of his air voyage between continents. The route for his great journey leads from Rome to the Iberian Peninsula, to Africa, across the South Atlantic to Brazil, northward over the jungles of tropical America to the United States, and then back across the Atlantic to Rome. We are later to learn of his losing his plane in an accidental fire in Texas, continuing on in another machine, and of his second trans-Atlantic crossing by way of Newfoundland and the Azores.

De Pinedo's South Atlantic crossing causes considerable excitement on board. A trans-Atlantic flight is a thrilling event. Every one seems interested in the previous oversea air voyages, and there is a lot of talk about them in the dining-room and on deck. We put together the information we have about air flying. Naturally we begin with the first crossing. Quite a

dramatic tale it makes. It was Britain against America in those early days of May, 1919. Who would be the first to cross the Atlantic Ocean by the air route? During the War the American Navy built four large seaplanes for use over European waters. They were so big that shipping by steamer meant taking them entirely apart. The next alternative was to fly them over. Rather an unprecedented way, to be sure. The plan was to fly them by way of Newfoundland, the Azores, and Portugal, with an eye to the shortest jumps. The path over the sea was to be marked by naval craft stationed at regular intervals. Then came the Armistice. But the naval authorities went right ahead with the flight, now not as a war measure, but as a matter of spanning the Atlantic by the sky route, a feat never before accomplished.

May of 1919 saw a long string of sixty American destroyers stretching across the ocean from Newfoundland to the Azores and the Portuguese coast. The three big seaplanes that took off from the shore and headed out along the line of ships were the NC 1, the NC 3, and the NC 4. The NC 2 had fallen out before leaving Long Island for Newfoundland.

But now the British took a hand in the game. Why not jump the Pond in one hop while the Yanks were cruising way around via the Azores? So Harry Hawker, an Australian, and Lieutenant-

Commander Grieve, an Englishman, made a reckless attempt.

In a swift Sopwith two-seater biplane they took off from Newfoundland and headed straight across for Ireland. Their ship was not built for ocean-hopping. It was a warplane. Hawker and Grieve even kicked off their landing-gear in order to cut down weight. This meant they would be almost certain to crack up even if they did reach Ireland. Everything went fine until they were far out at sea and they settled down to reel off the monotonous hours of straight flying. Halfway across came ominous sounds. The motor started to miss and the water-circulating system had become clogged. They simply had to come down, but here they were in the middle of the Atlantic, in a plane that would sink in a few minutes. All they could do was to keep on going as long as there was a kick left in their engine, and then . . . then what?

The game seemed about up when they saw something they hadn't seen for hours, a ship. On the horizon appeared a Norwegian tramp. You can bet they headed for it, limping along at as lively a gait as their disabled engine would allow. The steamer saw them and hove to. The plane was rocking and pitching on the sea and about to sink when the two adventurers were picked up.

A week passed and the world had no word of Hawker and Grieve. The Norwegian tramp carried no wireless. They were just about given

up for lost, when they turned up in harbor safe and sound.

Meanwhile, the American naval planes were going ahead, methodically and persistently. The NC 4 was the last to take off from Newfoundland for the Azores. She carried Commander Read, who commanded the flight. It was late in the afternoon. Darkness came on, but the way was marked clearly by the lights and flares of the destroyers. The NC 4 passed the stationed ships as regularly as if they had been railroad stations, hour after hour, until she was past the halfway mark. Then a dark mass ahead, and the plane plunged into blinding fog. The line of ships was lost now. Lieutenant Hinton was at the stick. There was nothing to do but fly by the compass. The NC 4 was lucky enough to find a hole in the fog. She sighted one of the stationed destroyers and then one of the islands. Without any further trouble she made harbor, successfully completing the first leg of the flight.

The NC 3, too, ran into the fog and nowhere found a clear space. She lost her way completely, and flew blindly through the sightless mist, tossed and beaten by violent rain squalls. Day broke, but the fog remained as heavy as ever. The NC 3 could only keep on groping. Fifteen hours and a half, after she left the Newfoundland coast, she had to descend onto mountainous seas. Her wireless set was out of commission. She could receive

messages, but could not send them. She could only drift and hope that searching destroyers might find her. The craft proved to be seaworthy. For twenty hours she rode the waves, her crew subsisting on radiator water and food soaked by sea water. Just as they were about to drift onto the rocky shore of the islands a destroyer sighted them. The NC 3 was badly damaged and obliged to drop out of the flight. The NC 1 was out of it, too, forced down by the fog a hundred miles from the islands, where she sank. Her crew were saved. The NC 4, left alone, struck out for Lisbon, and proceeded on to Plymouth, England, the first aërial craft ever to cross the ocean.

A few weeks later, Captain John Alcock, of the Royal Flying Corps, and Lieutenant Arthur Whitten Brown, likewise of the Royal Flying Corps, but an American by birth, succeeded where Hawker and Grieve had failed. In a big Vickers-Vimy, equipped with two motors, they made it from Newfoundland to Ireland in one jump. They had something of the same sort of experience as Commander Byrd. Fog hit them early and stayed with them. Only once, when they went to a height of eleven thousand feet, did they catch sight of the sun. They raced ahead through the blank mist, hour after hour, sometimes going in circles, sometimes diving, sometimes looping. Still they contrived to navigate an amazingly straight course, and came out only

a few miles from the point they had made their goal, crashing in an Irish bog. The airmen were not hurt.

Then followed a succession of trans-Atlantic flights. A British semi-rigid dirigible crossed with comparative ease. The German-built Zeppelin, now the Los Angeles, flew the ocean as if it were a part of the day's work. A Portuguese expedition went winging across the South Atlantic, using intervening islands as stops, crashing two planes and finishing in a third. The United States Army World Fliers crossed via Iceland and Greenland. A Spanish expedition took the air route from Palos, Spain, to Brazil, with stops at the Cape Verde Islands and Fernando de Noronha. And now Marquis de Pinedo had conquered the South Atlantic. At the time of this writing new trans-Atlantic achievements have been recorded. Nungesser and Coli have shot off into the sky and vanished. Lindbergh, Chamberlain, and Byrd have all three made it in a single leap. Lindbergh's was the ninth aërial crossing, the seventh by aeroplane, the fourth non-stop flight on the record for aircraft in general and the second for airplanes. Byrd's was the eleventh trans-Atlantic flight.

Coastwise steamers, fishing smacks, the New England and Canadian coasts, and a swift monoplane winging its way along overhead — Lindbergh kept a steady course till St. John's, Newfoundland, lay on the shore below him. Then out

across the sea and on through the night. There is no moon. A low fog hides the sea. Fog? Not so good. The floor of mist shows up vaguely white under the dim stars. Jagged heads jut above, icebergs, white and spectral in the starlight. Now the stars are blotted out, and storm-clouds are forming. The lone plane with the lonely flier heads into a great black cloud-bank. There is sleet in that cloud. It collects on wings and fuselage. Even the lights in the cockpit show the glistening growth. Lindbergh doesn't fancy flying an ice-encrusted plane. Out of the cloud and then high above it. A nebulous light in the sky, which increases and becomes clearer until its form is seen, although it is still veiled. Then the familiar shape of the moon appears. Flying is easier now. Although the moon was welcome, the dawn is more welcome still. It tells of a night's flight across the stretch from shore to shore, from continent to continent. In the glory of dawn there is no danger of sleet now, and Lindbergh flings himself into the heavy curling masses, unto dense blindness, where he must trust to his compass for guidance. The clouds below are a blanket on all sides, but the sun climbs high, and now the blanket has holes in it like a tattered rag. Through a gap lined with cliffs of gleaming cloud the ocean is seen a mile below. And Lindbergh goes shooting down until he is a hundred feet above the sea. Gayly along, skimming the waves, mile af-

ter mile until blind fog closes around him again. Land ho! Trees, a coast, islands. Mirage! Lindbergh knows he is still far from green Ireland and that there are no islands away out here. There is a cushion of rarer air close to earth or sea, and through it a plane flies easier and faster than through the thicker air a short flight up, so Lindbergh skips along the waves, ten feet above them, rarely more than two hundred.

Suddenly a fishing boat comes in sight, then another and another. Over the second he circles. A man's face peers from a cabin porthole. Lindbergh throttles his motor and shouts. They don't understand.

'Which way is Ireland?' Only shrugs and meaningless signs in return.

But in an hour a rugged coast appears, the southwestern tip of Ireland. And Lindbergh shapes a course for Paris. Over ship-dotted sea, across southern England, and then the Channel. By sundown he is above Cherbourg.

At ten o'clock the lights of Paris! Then that maddening hour at Le Bourget, and all Europe goes wild over the first man to fly the Atlantic alone. And that is the story of Lindbergh.

But what of the fate of Nungesser and the one-eyed Coli? Nungesser was always the daredevil in his air fights no less than in his Atlantic dash. For weeks he and the legendary Guynemer ran neck and neck as the premier French aces, each

striving to bring his record above the other's, each seeking the maximum of danger. Guynemer was proud of the number of times he had been shot out of the air, and Nungesser could tell triumphantly that he had been wounded seventeen times in aërial combat. Guynemer tempted death once too often in combat, but Nungesser had to wait for the terrors of storm and ocean.

Nungesser began his military career in the Hussars, and at the end of two weeks had won the *Médaille Militaire*, highest of all French awards for bravery. Aviation, to which he quickly turned, brought him at first the pain minus the glory. In trying out a new machine he crashed, broke a leg, a shoulder, and was otherwise so severely injured that it seemed he must surely die. Just out of the hospital and hobbling with a cane, he refused a furlough, and took to the air. The German drive for Verdun was on. The war in the air above that city was as savage as the war on the ground. The invalid Nungesser was in the thick of it. The first day he shot down a balloon. On each of the two days succeeding he brought down a plane. It was during this Verdun struggle that he and Guynemer vied with each other. Then Nungesser, after his seventeenth victory, was badly wounded. Again, while still convalescing, he flung himself into the sky and continued the career which, when the War ended, left him the second ranking ace of France.

But as we steam across to England, De Pinedo has just winged his way west to Brazil. So flying has become the topic of the hour.

Rather than snooze in a steamer chair, or swap yarns with the lingerie buyers in the smoking-room, I scoured our ship's library for flying lore.

Aviation is so new and it has developed with such speed that I for one knew little about its history. If encyclopædic information is your pet aversion, just skip these next few paragraphs. But if you are determined to soar with us from Amsterdam to the Golden Horn and from the Kremlin to the Alhambra, you may perchance be as keen as I to learn how men became birds.

I found two encyclopædias on board, a new one in the ship's library and an old one in the captain's cabin. In the latter I was unable to find such a word as 'automobile.' The nearest approach was 'automaton,' and under this heading I discovered that in the golden days of Greece, Dædalus, father of Icarus, won fame by contriving walking statues, dancing images, and a mischief-making wooden cow that gave birth to the Minotaur. Harun-al-Raschid presented Charlemagne with a water-clock, in the dial of which a door opened at each hour. The climax came at noon, when twelve doors were thrown back and twelve knights on horseback issued out and paraded around the dial before shutting themselves into their fascinating mechanism again.

Although for centuries automatons amused the world, it has only been a few years since the first automatic method of locomotion was invented. Our schoolbooks told us that the first commercially successful steamboat was Fulton's Clermont, that sailed up the Hudson in 1807.

Thirty-three years after that a lecturer at a meeting of the British Association scoffed at the idea of establishing intercourse with the United States by steamboat. 'Why, gentlemen,' said he, 'you might as well talk of making a voyage to the moon.' But in another four years the Cunards had launched their trans-Atlantic line with a 1350-ton side-wheeler, and from that grew the present mighty commercial fleets. If you had lived in the time of Robert Fulton and had prophesied that your children would live to cross the Atlantic in six days in palatial floating hotels, you would have been the object of pity.

Even the history of our now prosaic railroads is equally startling. It was not until about 1800 that horses drew cars on iron rails. Fourteen years after that, Stephenson produced an engine that would make six miles an hour under its own power, and ten years later he had one running so fast that an awe-struck witness said its 'speed was frequently as high as twelve miles per hour!'

Then came the automobile. All of us can remember its début, and in our mind's eye can still see the man who ran in front of each chugging

buggy with a red flag, warning pedestrians to flee for their lives.

Now, lo and behold we have realized man's age-old longing to imitate the flight of birds.

The flight of man, as Shakespeare said of the *genus homo* himself, has passed through seven stages:

1. The mythologic stage when man merely day-dreamed.
2. The early scientific stage, when man studied the flight of birds.
3. The transition stage, when engineers contrived power-driven planes that looked fine, but wouldn't fly.
4. The age of gliders.
5. The day of the Wright Brothers.
6. The dawn of military aviation.
7. And finally the present era of commercial flying.

Ever since our ancestors swung down from the tree-tops, man has dreamed of the time when he could soar upward and glide free as a bird. Imaginative tales of men flying through the air on winged horses, in chariots of fire, and on magic carpets are purple patches of yearning in the earliest known literature.

When I flew over Mount Olympus on my way from Athens to Salonika and the Macedonian front during the World War, my thoughts were of Hermes with his winged feet whom we need no longer envy

Of course you recall those two daring airmen, Dædalus and Icarus, the mythical heroes who have been the butt of endless jokes ever since they were pigeon-holed in history as the first aviators. Or possibly you are like me and have forgotten the details.

Dædalus, according to Mr. Bulfinch, the Boswell of classical heroes, was a noble Athenian who dabbled in sculpture. But the moment his pupil Talus gave promise of excelling him, he behaved like an orthodox Chicago gunman, and slew him. When the Athenian Areopagus condemned him to death, he escaped to Crete, where he became a favorite at the court of King Minos. But Dædalus had a *flair* for unpleasant messes. Once more he had to make a hurried get-away. King Minos tried to trap him by seizing every ship along the Cretan coast. A petty blockade, however, could not baffle the versatile Dædalus. What happened next has been told any number of times. In Europe, however, we shall be confronted frequently with magazines and other things concerning aviation, named for Dædalus, or for his son. So it might interest you to read the story of Icarus, as it was related to reporters by the only eye-witness, the young man's father. Thus spoke Dædalus:

'You see, King Minos resented that little joke of mine, when I made the wooden cow that gave birth to the Minotaur. So to keep from having

my neck stretched, I cleared out of Crete just one jump ahead of the King's posse.

'Icarus decided to come along, too, because he didn't fancy the idea of getting punished for the sins of his father. When we were discussing how we might get away, a crow flew by. I said to Icarus, if crows can fly, why can't we? So I designed two sets of wings. We went up onto a housetop, invoked the blessings of Apollo and Hermes, sprinted across the roof to get up flying speed, and took off for Italy.

'It was gorgeous flying weather, the sort that a British pilot on the London–Paris run would call top-hole. As we turned our backs on the inhospital shores of Crete, we thumbed our noses in the direction of King Minos's palace. All went well for a while, but Icarus, with the recklessness of youth, soared too high, like "Shorty" Schroeder, our famous army test pilot, who fell five miles, at Dayton.

'He decided to set an altitude record that would give latter-day airmen, like Schroeder, McCready, and Sadie LeCompte, something to shoot at for all time. But he flew too near the sun, the wax that held the wings to his shoulders melted, and he plunged downward in a spinning nose-dive.'

Since then many a reckless airman has crashed as did Icarus. But Dædalus was more conservative. Without attempting any aërial acrobatics,

he steered his course straight toward Italy, landed at Cumæ, built a temple to Apollo, and dedicated to that deity the wings which had saved him.

In that first period we might also include Simon, a magician who lived in the days of Nero. Simon invented a weird contraption, hoisted himself into the air, then crashed and was killed. Other men fashioned wings and leaped from towers, but they all came to grief because they had no knowledge of the science of aerodynamics. The great Leonardo da Vinci had his studio cluttered with half-finished flying-machines. He made a statement, which is as true to-day as it was five centuries ago: 'Safety lies in flying at a considerable height from the ground, so that if equilibrium be temporarily upset there may be time and space for regaining it.'

But it was not until a hundred years ago that aviation entered upon its second stage, the period of early scientific research. Sir George Cayley, a distinguished British scientist, suggested that wings, instead of being made flat, should be arched upward in order to curve from front to back and thus 'take hold' of the air. He also declared that a tail-like rudder would be needed to force the plane to ascend or descend. He even went so far as to predict that engines with revolving propellers would have to be devised to drive the plane through the air.

The experiments made in the third period still

did not enable men to fly. Sir Hiram Maxim, in England, and Clement Ader, in France, who now knew that planes could be made to carry loads through the air, tried to build them with power-driven engines to carry men. Ader actually succeeded, in 1897, in building a power-driven plane which flew three hundred yards, but it was wrecked in landing. Although unsuccessful, this must be recorded as man's first gallant attempt to brave the air in a power-driven airplane.

The next important step of this third stage was taken by an American, Professor S. P. Langley, head of the Smithsonian Institution. He built monoplanes that flew without a load, but when he constructed a larger plane to carry a man, it crashed because it was not properly launched. Many years after the death of Professor Langley, Glenn Curtiss borrowed the old Langley plane from the Smithsonian Institution, used the original engine, and, by attaching pontoons or floats, made it fly — proving that Langley had been within an inch of success.

In the fourth period men experimented with wings and built airplanes similar to those we have to-day, but without engines. They simply went to the tops of hills and glided down to practice the technique of controlling a winged machine in so difficult a medium as the air. Man had to take elementary lessons in balance from gulls, hawks, and other feathered Ph.D.'s. Two German boys,

Otto and Gustav Lilienthal, studied the gliding and soaring flight of birds. Otto made such progress that he was able to balance himself in the air and even glide in high winds. There being no gasoline motors in those days, he and his brother constructed a light engine, using carbonic-acid fuel, to install in one of their gliders. Before it was completed, Otto Lilienthal, while out gliding one day, lost control of his apparatus and was killed.

We now come to the fifth stage, the most fascinating chapter in the history of aviation. Since the fabulous flight of Dædalus and Icarus, three thousand years had passed. No one had yet succeeded in emulating them. But now real history is in the making. There is no myth about it this time; no wings fastened to men's shoulders with wax. The date is December 17, 1903. The scene changes from the island of Crete to a sandy stretch near the Atlantic Ocean at Kitty Hawk, North Carolina. Instead of Dædalus and Icarus we have two young bicycle mechanics.

Wilbur and Orville Wright studied Otto Lilienthal's experiments and tested the theories of all the airmen who had been working with gliders. At last they built a glider with which they made more than a thousand successful glides. In the meantime came the rapid development of the automobile, and a light gasoline motor was now available. But it was not light enough, so

they designed one weighing two hundred pounds, with four cylinders, that developed about twenty-five horse-power. The next problem was to make the engine drive their airplane. So they devised a propeller, or air-screw, not unlike those used at the present time. The machine, although crude, proved effective, and both Wright brothers made flights in it. But they were modest men, who chose to perfect their experiments unhindered by the limelight of publicity. It was not until 1908, hardly twenty years ago, that they made flights of any considerable length.

In the meantime, in 1906, the Voisin brothers, two Frenchmen, invented a weird-looking biplane. They built it for Santos-Dumont, a rich Brazilian who was an aviation enthusiast. The day before Santos-Dumont took his biplane on its first trip, a Danish inventor, Ellehammer, made the first successful motor-driven flight on the continent of Europe.

In the years between those long-distance flights of the Wright brothers in 1908 and the outbreak of the World War, airplanes underwent many refinements of construction. Blériot, for example, converted the clumsy, box-kite plane into a graceful monoplane. The Wrights and Voisin made similar improvements in the biplane. To encourage the advancement of a science, then regarded as a dangerous game, newspapers and individual patrons of progress ar-

ranged flying competitions and offered large prizes. The Wrights, Farman, Voisin, Blériot, and others established schools for pilots. But so many accidents occurred that the general public left flying to experts and dare-devils.

It was not until the sixth period — the four years of the World War — that the airplane came into its own. Of course, as soon as the first successful flights were made it was taken for granted that the airplane would become a vital factor in future wars. France used the first planes in connection with military maneuvers in 1910. Military planes quickly divided themselves into three types: fast single-seater, pursuit planes, slower reconnaissance planes, with room for an observer as well as a pilot, and big bombing planes for carrying heavy loads. Then came the World War and the frantic race for supremacy in the air. Hundreds of millions of dollars were poured into aviation: into perfecting airplane design; developing lighter, speedier, more powerful and more reliable motors; training skillful pilots; and building up a mammoth ground organization of mechanics and aëronautical experts.

The seventh stage — preparing the airplane for commerce and general transportation — was advanced fully half a century ahead of its normal development, because of the tremendous push given to aviation by the war. This final phase has, at the same time, been somewhat handi-

capped by the World War. The public mind has come to associate the airplane with death and destruction. Also, many war planes, originally designed for military purposes, were converted to the uses of peace, and not all of them were as safe as they might have been. But now most of the left-over war planes have been junked. Hundreds of new ones, constructed solely for commercial purposes, have been built, and it seems to me that these are at least as safe as an automobile operated in heavy traffic, and the day is in sight when the airplane will be safer than either automobile or railroad.

Scarcely twenty-four years have passed since the Wrights made their first flight at Kitty Hawk, yet at the present moment airplane routes cross-section every country in Europe. Planes are operating daily with the regularity of express trains, carrying hundreds of thousands of tons of freight and thousands of passengers. A similar network is covering the United States with an airway system that may soon surpass the miracles achieved in Europe. Sky routes have even been charted between London, India, Australia, and various parts of Africa; from several countries of Europe to North and South America; and what is more, pioneer airmen have made all these flights in safety. They have even crossed the Atlantic in sixteen hours. American army airmen have flown around the world. An

American naval officer took a quick trip to the Pole and back. The British are operating a regular airplane service between Egypt, Palestine, Transjordania, Mesopotamia, Persia, Beluchistan, and India. So rapid is the progress that before this reaches the press the line may have been extended to Burma, the Malay States, Java, and Australasia. The Russians and Germans are coöperating on a trans-Asiatic air route across Siberia from Moscow to Peking and Tokyo.

At present the most efficient regular daily air service in the world is in far-off Western Australia, between the pearl-fishing waters, the 'back-blocks of the Never Never Land' and the city of Perth. Air lines offer daily service to remote parts of South America. Mails are carried by air from New Orleans to Central America. The Belgians have a wonderful line right across the Congo. In addition to the commercial lines, every important nation has a powerful fleet of airplanes for military purposes. Even the Siamese and the Afghans have reconnaissance, bombing, and combat planes. It is all happening too fast to record.

Twenty years ago Rudyard Kipling made the following prophecy: 'The time is near when men will receive their normal impressions of a new country suddenly and in plan, not slowly and in perspective; when the most extreme distances will be brought within the compass of one week's

— one hundred and sixty-eight hours' — travel; when the word "inaccessible," as applied to any given spot on the surface of the globe, will cease to have any meaning.'

Although my wife and I will be among the first travelers to set out on an aërial tour of Europe and make a comprehensive journey over the twenty-five thousand miles of European airways, within a short space of time hundreds of thousands will be following our tracks across the clouds. Rudyard Kipling's prophecy has already come true. The age of aviation is here.

CHAPTER II

CROYDON — BRITAIN'S LIVERPOOL OF THE AIR

All earthly roads may lead to Rome, but all celestial roads meet at Croydon, the Liverpool of Britannia's air. Sooner or later, your destination will be Croydon. When you have once inspected the efficient supervision of this great landing-field, you will step out from the old-fashioned rank and file, who prefer to do their flying with one foot on the ground. You will catch a Continental plane at Croydon with the same matter-of-fact unconcern with which you now rush through the gates to take a train at Grand Central or Charing Cross.

Some day when passenger planes can rise straight off the ground and drop as gracefully as swallows into a space no bigger than a tennis-court, air stations will be as commonplace as union depots in the heart of every city from Kalamazoo to Kalgoorlie. But at present air expresses are not designed to park on Main Streets. They must run along the ground to work up a high speed before they will take to the air, and most of them cannot come down to *terra firma* at less than thirty to fifty miles an

hour. So they need generous meadows in which to stop after the wheels touch the ground.

Therefore, in setting forth on our tour of the skyways of Europe, we board our air liner at the London Terminal Aerodrome, on the outskirts of the city, near the town of Croydon.

An Imperial Airways bus collects a crowd of us in the early morning at a hotel on the Thames Embankment, which serves as a central passenger terminal. As we zigzag through long lines of carts loaded with that ultra-British vegetable, the ignoble but ubiquitous cabbage, bound for the stalls of the costermongers at Covent Garden, we pass a church that attracts everybody's attention. In electric lights across the front blazes forth the appropriate prophecy:

THE LORD IS AT HAND

Several of our autobus comrades are on their way to Croydon to make their virgin flight, and it is with an audible sigh of relief that they read this reassuring sign. Marie Antoinette on her way to the guillotine was a bluebird for happiness in comparison with the ladies, and one man is whistling nervously and gnawing an unlighted cigar in a way that hardly suggests a holiday-maker on a lark. If I were the head of Imperial Airways, Ltd., I should buy that sign and hang it across the entrance to Croydon Aerodrome to welcome newcomers.

After crossing Westminster Bridge and passing the great buildings of the London County Council and Saint Thomas's Hospital, we follow Walworth Road through the southeast corner of London to Camberwell Green and on to Croydon. Here at the end of a former rural path called Plough Lane, we come to the aërial crossroads of the British Empire. Down Plough Lane the highways of to-day stretch across the skies to Moscow, Constantinople, Bombay, and Tangier. Odd, isn't it, that the quickest way from London to Vienna should start from Plough Lane?

When we are permitted to peep behind the scenes at the complicated and efficient management of this greatest of all British air ports, it seems incredible that ten years ago it was part cow-pasture and part cornfield. The autobus pulls up in front of the aerodrome hotel — one of a famous chain called the 'Trust Houses' — where a piping hot breakfast of kippers, marmalade, toast, and coffee is served in front of a cheery log fire that drives the chill from our bones. A few passengers, not sufficiently comforted by the announcement that the Lord is at hand, pay their respects to the barmaid in a room just off the spacious, oak-paneled restaurant. In the bar, a necessary adjunct to every air port as well as every railway station in Europe, passengers, but not pilots, can fortify themselves for their flight. Library, billiard-room, and lounges are also pro-

vided, in case a November pea-soup fog prevents your plane from taking off on time. You can also spend the night here in greater comfort and at one third the cost of the average London hotel.

Croydon Aerodrome is not privately owned. It is the property of His Majesty's Government and is under the supervision of the Ministry of Air, which is divided into two distinct branches, military and civil. Croydon Aerodrome, although a military flying-field during the World War, is now controlled by the Director of Civil Aviation. The only British line operating between England and the Continent is the Imperial Airways, Ltd., an amalgamation of several pioneer commercial air lines, established during the first years after the War. As usually happens with trail-blazers, they made costly experiments, interested the public in flying and incidentally lost fortunes. They all finally pooled their resources in one concern, Imperial Airways, heavily subsidized by the British Government.

Every commercial air line in Europe depends on subsidies from its government. In the international battle for air supremacy, the civil and military aspects of aviation are closely interwoven. All commercial planes can be converted into engines of war at a moment's notice; big passenger and freight planes can be immediately used for bombing and transporting troops. Therefore, rival European powers eagerly vie with one

THE OLDER AND YOUNGER GENERATIONS
1907–1927

TUMBLING CLOUDS OF MIST FLASH PAST AT GREAT SPEED

another in subsidizing their commercial air lines, both as a preparation for future military emergencies and as a peaceful struggle for the mastery of the transportation facilities that mean control of the markets of the world.

All commercial lines using Croydon pay for the privilege. At present five great European companies are making Plough Lane their London terminal: Imperial Airways; the French Air Union; the German firm, the Deutsche Luft Hansa; the Royal Dutch Air Line, commonly known as K.L.M.; and the Brussels Company, the Société Anonyme Belge d'Exploitation de la Navigation Aérienne. The Swedish, Danish, and Russian firms have agents at Croydon, although they transfer passengers bound for London to other lines at Amsterdam and Berlin.

Imperial Airways alone carried more than twelve thousand passengers in 1926, without a single fatal accident. Since the airplane traffic was inaugurated at Croydon in 1919 it has multiplied itself eight times.

In company with one of the directors of Imperial Airways, we stroll over to the office through which all air travelers must pass. The porters have already piled the baggage on a counter behind which are stationed the most patient and courteous customs officials I have ever had the pleasure to encounter. With a stereotyped question or two, such as 'Have you any firearms

or opium?' they let every one through without opening a bag. As a matter of fact, we soon discover that the best way to avoid the usual irksome red tape in crossing frontiers is to fly. Moreover, you will find that your fellow air passengers usually represent the best classes of all nations, and until summer tourists swarm to the skies, your companions are likely to be statesmen, trusted messengers with diplomatic mail and hurrying business men. Many will be making their first flight and will feel like explorers embarking on a great adventure. Chronic kickers are conspicuous by their absence. The spirit of friendliness and comradeship is so contagious that customs and passport officials treat you with a respect and consideration that is a delightful relief from the accepted border annoyances.

Before entering the aerodrome, both you and your handbags are weighed as punctiliously as jockeys and saddles before a race. The reason is obvious, for an overloaded plane flies at considerable risk. Aeronautical engineers know the lifting power of a plane almost to the pound. The load that a plane can carry depends principally on the size and design of the wings and the horsepower of the engines. If your air express, under ideal weather conditions, is capable of carrying a maximum load of two and a half tons, the government experts issue an order that it is never to leave the ground with a load of more than two

tons. They insist upon this margin so that no plane will ever fly with a strain. If all the seats are booked and if all the passengers are 'heavy-weights' and carry hand-baggage in excess of the free allowance of sixty pounds, then a few valises may have to follow on another plane. In spite of occasional personal inconvenience, all air travelers will be relieved to know that European governments rigidly insist upon this margin of safety.

Every up-to-date passenger plane has a compartment for mailbags, hand-luggage, and freight. So, if there is any excess weight, a box of caviar, a crate or two of asparagus, a pair of pedigreed Belgian rabbits, or a few ingots of gold bullion will be held over for the next plane. But unless you try to take your wardrobe trunks and household furniture, your baggage goes with you. In fact, if you like, you can send your trunk or your piano all the way to Budapest or Warsaw in a freight plane and pay less for hurling them across the sky than it would cost to dispatch them by express. The air line will call at your hotel for your trunks and deliver them at your suite in the Excelsior Hotel, Belgrade, a few hours later.

The aërial freight service between European cities is steadily growing in popularity. The London–Paris and the London–Amsterdam routes, particularly, carry heavy freight. We saw Burberrys, tweeds, golf-clubs, and other English specialties piled up for swift transport to all

parts of Europe. The exclusive Bond Street shops were packing into their delivery trucks dresses from Paris and novelty jewelry from the Rue de la Paix. Even canaries, parrots, and polo ponies have taken to the air.

But before boarding our plane, we are curious to see just how this 'harbor in the fields' is run. It does not take us long to learn that a harbor-master is as essential to the smooth administration of a great air port as a station-master to a metropolitan railway terminal.

The flying-field itself occupies a vast level area two or three times the size of a university athletic field. Along one side are the cavernous hangars, or sheds, where the airplanes are protected from rough weather and groomed by expert mechanics for the next flight. Hemming in the field on the other sides are the hotel and restaurant, machine-shops, wireless plant, with its three lofty masts, police headquarters, and a score of other buildings. Not the least important is a weather bureau, because without complete meteorological information along the air routes, commercial aviation would be a farce.

Dominating the converted cow-pasture, figuratively and literally, rises a structure forty feet above the surrounding buildings. This is the Control Tower. And that man sitting up there, shut in on all sides by glass windows, is the aërial harbor-master. To visit the throne room

of this czar of the heavens, we climb, ship-fashion, a narrow iron ladder. Aloft in his aerodrome crow's-nest, with an uninterrupted view of the flying-field, sits this celestial ruler, whose official title is Civil Aviation Transport Officer of the London Terminal Aerodrome. But the pilots, with their instinct for short cuts, call him the C.A.T.O.

In front of him spreads a huge map, showing all the air routes that radiate out from Croydon. At his side are signal buttons, telephones, and speaking-tubes, by means of which he can keep in touch with the near-by offices, shops, and hangars. His windows overlook the aerodrome. A great map painted on the top of his flat desk shows him the position of every plane that flies over the commercial air routes between London and the Continent. His head is adorned with wireless ear-phones, and he can talk even to the pilots of planes a hundred miles away. The C.A.T.O. directs the movements of all airplanes entering or leaving Plough Lane and supervises the management of the whole Croydon Aerodrome.

Look! Passengers are getting into that giant all-metal biplane.

'That's an Armstrong "Argosy" bound for Cologne,' the C.A.T.O. informs us. 'In addition to its own weight and the weight of its crew, it carries a pay load of forty-five hundred pounds.'

The long cabin accommodates eighteen people,

and for this morning's flight every seat is taken. If the passengers average one hundred and sixty pounds and if each one has a suit-case weighing sixty pounds, the freight compartment can still hold five hundred and forty pounds of Piccadilly hats for the swagger haberdasheries of the Friedrichstrasse.

The pilot opens his throttle and the three Jaguar engines, each with its three hundred and eighty-six horse-power, sweep the plane across the field to a convenient position for taking off into the wind. The C.A.T.O.'s assistant steps out on the balcony and waves a red flag to announce that the aerodrome is clear. As the pilot opens his throttle, we hear the deep-throated roar of the three Jaguars. The 'Argosy' rises gracefully, circles above Plough Lane and disappears in the direction of Canterbury, Dover, and the Channel. In four short hours those eighteen aërial argonauts will see the spires of a great cathedral above the horizon and a moment later their Imperial Airway 'Argosy' will descend on the west bank of the Rhine outside Cologne.

Other planes leave at short intervals. One is a trim Fokker monoplane of the Royal Dutch Air Line, bound for Rotterdam and Amsterdam. Next comes a lumbering 'Goliath' of the French Air Union, bound for Le Bourget, on the outskirts of Paris.

As each liner gets the signal to leave and soars

above the fields of Surrey, the C.A.T.O. leans over a big map on his desk. In his hand he holds a tiny flag in the colors of the company owning the plane. He places this flag at the starting-point of the route that the departing air express is to follow. The weather experts in the building behind the hotel have told the C.A.T.O. the exact velocity of the wind. He knows the average speed of each plane; and at ten-minute intervals he moves each flag to the point its corresponding plane should have reached at that given moment. But he is in even closer touch with the plane than this. Not only does he know where each plane *should be;* but, what seems far more uncanny to us, he knows just where each plane *is*, even if it has been blown off its course or is lost in a fog.

This miracle needs further explanation. I saw nothing in Europe that so intrigued and amazed me. The C.A.T.O. in that Control Tower at Croydon is in direct communication with the pilot of every commercial liner within a radius of two hundred miles, and sometimes he can carry on a conversation with a pilot three hundred miles away. All passenger planes are equipped with the latest wireless sets, and the pilots can send messages as well as receive them. At any hour the pilots can talk directly to the men in Croydon Tower and hear their voices as plainly as if they were sitting in the crow's-nest.

Every few minutes each pilot speaks into the microphone slung around his neck. He reports his exact position and then, through the earphones that he always wears clapped over his helmet, he hears the answering voice of the C.A.T.O., repeating his words after him. Every time a pilot gives his position, the C.A.T.O. leans over his map and moves the little flag along another peg.

It is a typical British day when we arrive at Croydon. Gray and gloomy as it is at Plough Lane, the weather reports coming into the Control Tower from Lympne on the Channel and from aerodromes in France inform us that dense fog extends halfway to Paris. While our eyes are glued to the C.A.T.O., pushing forward the flags on his fascinating desk map, we suddenly witness a demonstration of the vital rôle that wireless plays in commercial aviation.

The morning Handley-Page plane, *en route* from Paris to London, had fumbled through the fog-bank that hovered over northern France. Then, as so often happens, the pilot found the weather clear when he crossed the Channel; but the moment he passed the white cliffs along the English coast, he ran into another fog-bank, too high to climb over. In less than ten minutes, the fog became so dense that the cabin lights had to be switched on, and the passengers felt as if they had been whisked from noon to midnight.

The pilot, no longer able to distinguish a single landmark, puts the microphone to his lips and speaks through space to the C.A.T.O. at Croydon, while we are standing at his side in the central tower. It takes the air traffic chief just two and a half minutes to figure out the pilot's position and give him his bearings.

The moment the pilot of the Handley-Page plane microphones in for his position, the operator in the Croydon wireless exchange, near the Control Tower, turns a switch that connects him with another wireless operator many miles to the north, at Pulham, in Norfolk County, whom he orders to stand by. Then he asks the pilot of the Paris–London plane to speak into his microphone, say his prayers, recite a bit of Shakespeare, or say anything just to send out sound waves to enable them to locate the direction of the sound. While the pilot is answering, the wireless operator at Croydon and his colleague at Norfolk both tune in with the aërials of a special instrument, called a 'direction-finder.' This D. F., as the pilots refer to it, is able to detect, by the sound of the pilot's voice, from just which of the three hundred and sixty degrees of the compass the voice is coming.

The C.A.T.O. is listening in for this information. On his map is a string, one end of which is tied to a peg placed in the dot indicating Croydon. A second string hangs loose from the Pul-

ham peg. The direction-finder at Croydon registers that the pilot's voice is coming out of the fog several degrees south of east, so the string from the Croydon peg is quickly and accurately stretched across the map in the right direction. Meanwhile the wireless operator up in Norfolk reports that the pilot's voice on his D.F. registers from a few degrees to the east of south. As the Croydon and Norfolk strings are stretched across the map, they overlap directly above Cranbrook, a village between Folkstone and Tunbridge Wells.

The pilot now knows that he is a few miles south of his course. In another instant he swings a little to the right, sets his compass and flies straight through the fog to Croydon. Near Sevenoaks and within sight of the spires and chimney pots of London, he emerges from the clouds.

When the C.A.T.O. catches sight of the plane, we are still in the Control Tower. A moment later the shriek of the aerodrome siren announces its approach to the officials of the air port. A Belgian plane, bound for Brussels, happens to be taxi-ing across the flying-field. To eliminate the possibility of a collision, the officer in the Control Tower telephones the pilot of the Handley-Page to circle the field until the departing Belgian liner has taken off.

I climb down from the tower in a daze. I had

heard a voice many miles away, coming out of dense clouds — the voice of a human being in an airplane, racing blindly through the sky at the rate of a hundred miles an hour. The voice from the fog had asked the man standing at my side to tell him exactly where he was. And this worker of miracles — the C.A.T.O. — had quietly and unconcernedly done that very thing, in exactly two and a half minutes.

London, of course, has been woefully handicapped as an air port because of its notoriously fickle and atrocious weather. Fog is now, and always has been, the airman's worst enemy. The pilots who fly in and out of Croydon are confronted with the most serious problem of aërial navigation. Just imagine attempting to fly through a fog so thick that all wheel traffic must stop; so thick that it even penetrates underground, making it impossible for the Tube to run; so thick that you bump into people in midday without seeing them. Then try to picture yourself piloting an airplane traveling one hundred miles an hour, hovering, blind as a bat, over the outskirts of London, and trying to maneuver to earth without wrecking your $100,000 plane.

While we were in the weather bureau at Croydon discussing fogs, the pilot of the big Handley-Page plane in which we were to fly to Holland dropped in. He was an undersized chap, no bigger than a jockey. Pilots are silent men. Their

daily job does not inspire garrulity. But when some one mentioned to Captain Gordon Olley that I had flown with the Royal Air Force during the War, and more recently had been associated with the American Army Air Service World Flight, he loosened up and joined in the conversation.

'Last year,' he began, in recounting one of his fog experiences, 'I was on my way back from Paris with a cabin jammed with passengers, when a pea-souper settled down over Croydon. Fortunately, the fog layer was so low that I could just make out the tips of the roofs on Purley Hill southwest of the flying-field and the top of the Control Tower. Having flown in and out of Croydon for years, this was enough to give me my bearings. But the aerodrome was completely hidden. However, I set the plane right down through the fog and made a satisfactory landing. To give you some idea of the beastliness of that fog, none of us dared move from cockpit or cabin for fear of getting lost. It took nearly an hour for the aerodrome officials and mechanics from the hangars to grope through that fog and find us.'

Olley also told us of a fellow pilot who arrived over Croydon in a fog of the same density, except that it extended upward, like the Himalayas. He flew around in it for over an hour without daring to land. He finally accomplished it, but not with

his eyes. It was the wireless telephone that pulled him through. The C.A.T.O. could estimate the pilot's altitude by the sound of his engines. So he kept giving bearings to the pilot, who brought his circles lower and lower. Little by little he edged closer to the ground, tunneling at terrific speed through the blinding yellow fog. At last he slid safely onto the field. There are lighthouses on the edge of the field at Croydon as well as lights on every roof near the aerodrome. But that fog was so thick that even the skyrockets used to effect night landings were futile. Wireless did the trick.

The British are experimenting with a new device to simplify landing in fogs. A satisfactory solution will soon be reached. In the meantime, pilots rarely attempt to take off in a heavy fog. In spite of the weather, Imperial Airways maintains a yearly regularity of ninety-three per cent.

Fog or no fog, the miracle-worker in the Control Tower gives me complete confidence in Croydon. We know the C.A.T.O. has an eye like a hawk's and, better still, an ear like a panther's, for the lives of passengers committed to his care. So with light hearts we climb aboard the afternoon air express bound for Holland, and get our first view of England and its storm-tossed Channel from the sky.

CHAPTER III

ACROSS KENT TO THE LAND OF WINDMILLS

It would take Shakespeare and Freud together to do justice to a first flight, especially if above picturesque country and in fickle weather. Something like Psychoanalysis of Romeo and Juliet Fleeing in an Airplane from Irate Capulet Father and Hysterical Montague Mother might do. Certainly, if the immortal lovers had eloped in a trusty Handley-Page, there would have been no tragedy. Unfortunately, I am not endowed with the gifts of the sixteenth or twentieth century reader of souls. I can't even splash a Cubist canvas with my own fresh impressions of flying; for although I'm no wind-scarred veteran of the air, I had already flown thousands of miles before venturing on this aërial tour of Europe.

But until my wife took the four-hour hop from England to the Low Countries, air to her was fresh or stale, a purely impersonal medium revolving around windows and veranda, subways and promenade decks. Her reactions to this, her first flight, concentrate the combined terror, pleasure, and novelty of Everywoman's first Channel experience in an airplane. Women first, in airplanes as well as on steamers. So I shall let

her describe what it was like to embark on our twenty-five-thousand-mile adventure through the clouds.

'After spending a half-day inspecting every corner of Croydon Aerodrome and being amply reassured that the wizard pushing buttons in the Control Tower holds the same sacred tradition about the safety of passengers as the captain of a liner who has sailed the Atlantic for forty years, I ought to be ashamed of myself. But I can't help it. When the crucial moment comes to board the Amsterdam plane, I have visions of flags at half-mast and a brass band playing the Funeral March. For the honor of the family, I am glad that the hollow rattling of my knocking knees and chattering teeth can't be heard above the roar of the engines, which are being warmed up by one of the aerodrome engine inspectors.

'I feel like a puppet pulled by wires, but it's too late to back out. I must see the thing through. I let Colonel Burchall, one of the managers of Imperial Airways, and my husband help me stumble up a few steps. The wind created by the whirling propellers almost blows my hatbox out of my hand. If I ever live through this day, I am wondering if the little silk dress and lone evening gown in our joint suit-case will stand the wear and tear of every capital in Europe.

'Stooping low, I find myself in a cabin much like the interior of a luxurious suburban auto-

bus, except that this is much narrower. Fourteen chairs, seven on each side, with a slender aisle through the center, are fastened to the floor. I sink into a seat in the middle, not at all disappointed that the wide lower wing will cut off most of the view. I already feel as if I were hanging for grim death to a corner of the Woolworth Building and I'll never want to look down again.

'Other passengers — seven in all — file through the cabin door. They seem a bit shaky and must be anticipating their experience as much as I am. Then the crew — a pilot and mechanic — looking like Arctic explorers in their fur-lined, wind-proof suits, clumsy fur-lined boots, fur-lined helmets, and goggles bordered with fur to keep out the wind, shuffle down the aisle and squeeze through a little door leading to the cockpit, which is in the open in front of our cabin. After they have strapped themselves into their seats, they wrap big woolen mufflers around their throats and pull on their fur-lined gloves.

'The man who has put our handbags into the separate compartment in the fuselage, or body of the plane, behind the cabin, and has ushered the passengers to their seats, is called the "rigger." His job is to "trim the ship" — that is, to arrange passengers and cargo so the plane will be evenly balanced. Colonel Burchall says a proper balance is important in "taking off," but immaterial when we are once under way.

OUT OF STORMY SKIES THROUGH STREAKS OF SUNSHINE ALONG THE WINDING THAMES

ABOVE THE OLD ROAD TO BECKET'S SHRINE

'The rigger tells me to fasten across my waist the wide strip of leather attached to the chair, to keep me from being hurled against the front of the cabin if the plane should make an abrupt landing — one that isn't a scheduled stop! The safety belt, instead of comforting me, reminds me of the life-preservers in a stateroom, and mentally I review all the horrid smash-ups that might happen between Croydon and Amsterdam.

'To distract my attention, Colonel Burchall explains that this giant biplane is one of their new fleet. Imperial Airways have just replaced their old planes with sixteen multi-engined, luxurious airliners. They are made by three concerns: Vickers, Armstrong-Whitworth and Handley-Page. This one, christened "City of New York," is a Handley-Page "Hampstead." Even though my head was in a whirl before I entered the cabin, I observed with a subconscious sixth sense that there were three engines, one in the nose of the plane and one on either side, suspended between the wings.

'The rigger, who nobly fulfills his duties as master of ceremonies, makes deaf and dumb signs and motions above my head to a little receptacle containing cotton. Pulling out a bit, I obey his signs and stuff it into my ears to help deaden the maddening roar of those three powerful Jaguars, which, with their eleven hundred and fifty-eight horse-power going full blast, make

more noise than ten boiler factories. The cotton to some extent reduces the terrific din, which affects the ear-drum and is thought to be partly responsible for air-sickness.

'The rigger and Colonel Burchall climb out, the cabin door is carefully closed and inspected by the rigger, so it will not fly open in mid-air and pitch some air-sick passenger into the Channel if he happens to lurch against it.

'Now we are really ready to start. The assistant in the Control Tower waves his red flag to signal our pilot that the aerodrome is clear. We leave "the line" right to the dot, like an express train pulling out of Victoria Station for a Channel port. As we taxi across the field, the sensation is not unfamiliar. I might be in a motor-car going over a very rough road. Several hundred yards from the Control Tower, we swing around and head into the wind. On one of the hangar roofs is a long silk stocking, which airmen call a sock. Our pilot can tell the direction of the wind a half-mile away from the puffing and swinging of this Santa Claus sock in the breeze.

'The pilot opens the motors full out now. We take a swifter run across the field. Suddenly, the bumping stops and we seem to be gently rising into the air. But the wheels touch the turf again for one final bound. At last I can feel the great plane climb. Now we balance a bit, like a crino-

lined circus lady on a tight-rope. Then up and up, until the altimeter needle flutters around number 1 on the dial, which stands for one thousand feet.

'When I was a child I longed to ride through the sky like Mother Goose. With this jerky swooping up and balancing and swinging in wide circles, I am at last astride Mother Goose's broom. I must confess I don't particularly enjoy the curious effect of instability. And there is no need for a broom. As we increase our speed from ninety to one hundred and ten miles an hour, a perfect hurricane of air blows away all the cobwebs from the sky. I feel exactly as if I were soaring among the clouds in a frail canoe, and I'm afraid we'll upset if I move or breathe. I clutch the chair with both hands and sit rigid and tense. My nerves are at the snapping point, at least I think they are.'

When I notice the utterly wretched expression on my wife's face, I jump up in the aisle, lean over, smile, and peer out of her window to reassure her. She thinks this will surely capsize the plane, but I write her a note and tell her that once you are in the air, you can look out of your neighbor's window or dance the Charleston in the aisle, if you like. Even if all the passengers were suddenly to crowd against one side of the cabin, the pilot would only have to give his control wheel a

slight twist, so wonderfully stable are these great ships of the air.

As we cut a wide circle above the aerodrome, I urge my wife to get the weird, wrong-end-of-the-opera-glass effect of the hangars, wireless masts, and Control Tower and watch Colonel Burchall, the rigger, and other officials dwindling into Lilliputians. She does not share my interest in the palace on the edge of Croydon, where the Archbishops of Canterbury summered a few hundred years ago, and where Queen Elizabeth and her train of courtiers stayed when they 'pased thorowe that waye agayne with the Gromes of the Privye Chamber yf yt please you Sir.' She does glance toward the great glass roof of Crystal Palace several miles to the north and the smoke shrouding London just beyond; but she turns swiftly away again.

As for looking straight down into the crooked, twisted streets of Croydon, where John Ruskin walked as a boy on his way to Market Street to visit Old King's Head Inn, kept by his grandmother; where John Gilpin may have been a citizen; where the charcoal colliers prepared the fuel for all London in the days before 'soft coal'; where the coaches used to turn sharp at the sign of the 'Greyhound' on their way to Brighton — she simply refuses to be annoyed by history that won't walk in the same geometrical plane with her.

It is interesting for air travelers to know that

England's first railway line was built here, back in 1799. The carriages were drawn by horses. Anybody, with a cart that fitted the grooved iron rails, could be pulled along the railway by his own horse if he paid toll. But like the first commercial air lines, the first railway out of Croydon was a fiasco. The shareholders lost every farthing — about $300,000 at present-day values.

We have climbed to twenty-five hundred feet, according to the altimeter, and we are flying southeast over the lovely weald and downs of Surrey. The glaring, stiff rows of new houses, thrown up in all directions by London's suburban real estate speculators, are occasionally relieved by a charming, Old-World village, with its quaint 'Red Deer' or 'Boar's Head' inn, its venerable yew trees and ivy-covered Tudor cottages.

After we have passed the mushroom Pike's Peak and Mount Everest of Surrey, Nor Hill and Botley Hill, we fly directly above the village of Titsey and Titsey Park, cut by the famous Pilgrims' Way that leads to the shrine of Thomas à Becket at Canterbury. In those good old snail-and-tortoise days, when pilgrims walked and left flying for the angels, the mediæval tourist, with a good business eye for the next world, camouflaged his pleasures in this world by describing his holiday jaunt as a pilgrimage. Thus, a pilgrim who set out for Rome was eventually called a roamer, and, likewise, saunterer came from *sainte terre.*

As we fly over the gentle, rolling country of Surrey into Kent, I re-people league after league of that Pilgrims' Way, which inspired our first great author to use our mother tongue. I can see them, a hundred thousand strong, bound for Canterbury to attend the Feast of the Translation in July — beggars, knights, yeomen, squires, scholars, wives of Bath, mingling with dainty abbesses and rollicking monks, scandalizing the rustics at the 'Lion and Lamb' with their boisterous tales and amorous songs — immortalized in all their roguery and crusading courage, their piety and naughtiness, in Chaucer's limpid, crystal fourteenth-century English.

On our right, between Titsey and Westerham, nestles the village of Limpsfield, where William Caxton, inventor of the printing-press, was born. As he himself said: 'I was born, and learned myne English, in Kente, in the Weeld, where English is spoken broad and rude.' Beyond Limpsfield is Barrow Green, once the home of Jeremy Bentham.

We have left Surrey astern and are careening over the most famous of all the counties of England. Any one with a drop of Anglo-Saxon blood in his veins feels his pulse quicken as he looks down from the clouds on Kent. For Kent, once a powerful and separate kingdom, has, since the landings of Cæsar and William the Conqueror, made stirring history — the kind that lives in

poetry and drama; it was in the Middle Ages the ecclesiastical center of England, where saints were haloed and archbishops beheaded; battles for freedom have been fought on its soil, as Englishmen conceive freedom; it has been the birthplace of England's greatest sons. The magic pages of Shakespeare, Dickens, Thackeray, and Jane Austen flutter open as we glide across Kent. With the sole exception of the Holy Land, there is no region so small as the county of Kent that means so much to English-speaking peoples.

Less than two minutes after leaving the borders of Surrey, we fly over a clean-looking, ancient town, with narrow approaches to its broad main street. Overlooking the town is an historic church within which stands a memorial to a famous native son, 'that tallow-faced Put with the carroty hair' who conquered Quebec, defeated the French army under Montcalm on the Heights of Abraham, and made half of North America a part of the British Empire. For General James Wolfe lies in the churchyard of Westerham.

We cross and recross the zigzag Pilgrims' Way and then follow a white ribbon, the London Road that has led to Sevenoaks, Tunbridge, Ashford, Folkstone, and Dover since the days of Cæsar and Caligula. The stretch of parkland near the main road is reminiscent of the New World again, for it is named Montreal, in honor of Sir Jeffrey Am-

herst, who took Montreal from the French in 1760.

Then on we race, over the picturesque town of Sevenoaks, tucked in the bosom of a series of glorious wooded hills. Opposite the church of Sevenoaks is another park, and, in the midst of it, one of the finest Tudor houses in all England, a residence of earls and archbishops in the days of Elizabeth and in the reigns of Henry VII and Henry VIII. On and on, through gray skies to Tunbridge, renowned for the creeper-clad towers of an ancient Kentish castle commanding the river Medway, but known chiefly because of its proximity to the town five miles to the south — Tunbridge Wells, where Londoners have flocked to drink the waters ever since Dudley, Lord North, announced, somewhere around 1600, that they had cured his tuberculosis. But Charles the Second's Queen, as Pepys tells us, made it a really fashionable watering-place *pour la Maladie Imaginaire*. Since then, from Defoe and Thackeray to Meredith and E. V. Lucas, Tunbridge Wells has been a popular resort with favorite characters in English fiction.

While I am re-living history as one Kentish vista folds into another, my wife is disturbed by other thoughts:

'We swoop up and down and lurch from side to side. Every time we plunge into a cloud or emerge on the other side of one, we get a bump. The sky

bristles with invisible bumps. We have been in the air nearly a half-hour, and at last I am plucking up courage to look at the world below. I feel like a giantess flying over pygmy villages. Even the horses in the fields run when they hear the mighty hum of our three Jaguars.

'But by the time we have passed Ashford and start over Romney Marsh, where the smugglers used to hide, I no longer have any interest in scenery. I feel my first suggestion of air-sickness. When I have the ambition to look around me, I discover that there is a special basin under each chair. Most of the passengers are holding them in their laps now. They are ghastly green and apparently feel far worse than I do. If this merciless dipping doesn't let up, I don't care whether I land in Holland or drop into the Channel.

'We are descending, and the altimeter registers only three hundred feet. Straight ahead is a grayish sheet of water. What the rest of us respectfully call the English Channel, the pilots on these passenger liners contemptuously label "the ditch."

'I forget my air misery for a moment, as we soar over the famous chalk cliffs. Down where the boys are gathered with their butterfly nets is the very spot on which Julius Cæsar and his legions camped when they crossed the narrow seas from Gaul. That town built of red bricks is Folkstone, where we have come ashore so many

times on our way from Boulogne. The big cliff covered with shrubs is the Lees. I climbed it once and found a memorial to Folkestone's most illustrious son, William Harvey, discoverer of the circulation of the blood. If he could take a sample of mine now, he would need a powerful microscope to find any red corpuscles. The heavy rain-clouds through which we have been flying and which have caused all the bumps are called "Folkestone girls." Just like the men, to blame the weather on the girls!

'A few small steamers are darting across from Folkstone, and the water looks smooth as a billiard-table from the edge of the Folkestone girls. I feel safer flying over the sea, although I realize that this is a land plane. Our landing-gear, or under-carriage, as airmen call it, consists of huge shock-absorbers and two big wheels with pneumatic tires to soften the jolts when we come down into a field. All the same, I think it would be less disagreeable to fall into the English Channel than into Romney Marsh or into one of those chalk quarries back in Kent.

'There are life-belts in the narrow rack that runs along each side of the cabin above the windows. They are not inflated, and a notice requests passengers not to blow them up except in emergency. But I calmly disobey, because I am curious to see how long it will take to inflate one. And, after all, we might take a flop into the

Channel! I find it takes me *fifteen* minutes! Anything and everything can happen in an airplane in fifteen minutes. For instance, by the time my life-belt is of any use as a life-saver, we have crossed the Channel, turned north at Cape Griz Nez, and are skirting the French coast, with the harbor and buildings of Calais behind us, and the sandy beach leading north to Dunkirk and Ostend just ahead.'

When I saw my wife and the other passengers reaching for the basins under their chairs, I began to feel pea-green myself. In all my experience in airplanes, never before had I flown in an enclosed cabin instead of in the open air. The difference is preponderously in favor of flying outside. The other passengers insisted on keeping the windows closed and the atmosphere rapidly grew unbearably stuffy. Some of the passengers were whiffing aromatic salts. One young man was sadly biting into a sandwich and another desperately sucking a lemon. The lady in front of me clutched to her heaving bosom a bottle labeled, 'Mother Sills' Remedy for Seasickness.' As the trip grew bumpier and bumpier and my neighbors sicker and sicker, I unbuttoned my shirt collar and I would have given one hundred pounds for one pint of fresh air.

Fortunately for me, Captain Gordon Olley happened to look back through the little glass window between the cockpit and the cabin, just

after we passed Tunbridge. He must have seen the last-gasp-of-a-dying-fish look on my face, because the mechanic sitting next to Olley left the cockpit, crawled back into the cabin, took off his helmet and goggles, and handed them to me.

The minute I got outside with Olley and leaned beyond the wind-shield so the hundred-mile-an-hour gale could hit me in the face, I felt like a new man. From Tunbridge to Amsterdam I heartlessly kept my reserved front seat in the breeze and left the poor mechanic to survive, if he could, the harrowing spectacle in the cabin.

CHAPTER IV

IN THE COCKPIT TO AMSTERDAM

The cockpit of a modern passenger plane, such as the Handley-Page in which we are flying to Holland, is more fascinating than the wheel-house, chart-room, and bridge of an ocean liner, or the cab of a locomotive. Not only does the pilot do his own navigating, his own steering of the big wheel that regulates the up-and-down and side movements of the plane, but he operates a rudder-bar at his feet, which tips the plane to either side in turning; he moves throttles that regulate the speed of the engines; he has a hundred eyes on a dozen gauges and instruments on the board in front of him; and at the same time he keeps up a running conversation with the Control Tower back at Croydon, to let them know where he is and to find out from meteorological bureaus along the route the condition of the weather ahead.

Every pilot employed by Imperial Airways is a veteran of the World War. Captain Olley has flown continuously for eleven years; he has made long flights every day and has never had an accident! If passengers only possessed a thumb-nail biography of their pilots before venturing into a plane for their first flight, they would leave the

worrying to the man at the wheel and relax completely to enjoy their trip.

As we skirt the French and Belgian coasts, I divide my attention between the rapidly changing cities that vanish in kaleidoscopic bird's-eye views and Olley's wireless conversation with the C.A.T.O. in the Control Tower two hundred miles behind us on the outskirts of London.

Olley's wireless set is a compact little affair invented by that wizard, Marconi. Hardly any tuning or adjusting is necessary, because the nine-hundred-metre wave-length is controlled by four little levers at his side in the cockpit.

I won't flounder beyond my depth into a complicated mechanical dissertation, but for the benefit of those who, like myself, may not have studied the whys and wherefores of things electrical, I will explain briefly. When the pilot pushes one of those little levers away from him, the set is ready for transmitting and he can talk. When the lever is pulled toward him, he can hear the voice of the harbor-master at Croydon or of any one chiming into the conversation from other radio stations along the line. The other three levers have technical uses which would only be understood by radio experts, and have to do with such things as the tuning condenser, the receiver reaction coupling, and the resistance, whatever they may be.

Over his helmet the pilot wears ear-phones and

around his neck is slung a small microphone. The mechanic, sitting next to the pilot in the cockpit, also wears ear-phones and microphone so that he can hear the conversation and put in his own little say if he has anything pressing on his mind. One of the most uncanny things about this set to one in the A B C class of wireless, like me, is that the pilot can actually hear his own words coming back to him and thus check up on the accuracy of his transmission.

You may wonder whence the power is derived for operating the transmitting end of this magic box tucked into a corner of the cockpit. On the outside of the plane below the big front air screw is a tiny propeller attached to a generator. As the plane speeds through the air, the rush of wind revolves this miniature propeller. This, in turn, drives a small dynamo, which generates the current that provides the necessary power for the transmission of the pilot's voice.

You may also wonder how an aërial is installed in an airplane, and how it is 'grounded' a mile or two above the ground! After your plane leaves the aerodrome and mounts a thousand feet or so, and again, just before the plane reaches its destination, you will see the pilot or the mechanic reach down to the floor and start winding something. He keeps up this mysterious operation for five minutes. He is winding or unwinding the aërial. Around a small drum is a wire several

hundred feet long, with a small iron weight at the end to keep it taut when unwound. While you are flying, that wire trails beneath you and catches the sound waves. The set is 'grounded' by connecting the wire to the plane. The tiniest scrap of metal that goes into the construction of a great plane is carefully connected with every other piece. This complicated mass of metal, all bound into one harmonious whole, is apparently sufficient to take the place of the earth.

This is the kind of long-distance conversation I am listening to with the borrowed ear-phones of the mechanic, banished to the cabin:

Captain Olley switches on his transmitting lever and speaks into the microphone: 'Hello, Croydon, Imperial North Pole calling, now passing Zeebrugge; over.' He gives his message twice and Croydon repeats it twice after him, so there will be no possibility of a mistake. Each Imperial Airway plane is identified by five letters of the alphabet. If the two final letters are N.P., words like North Pole are used, because they are more readily distinguished than mere letters by the Croydon official. When Olley says 'over,' he has finished his report, switches his set to the receiving apparatus, and is awaiting a reply.

The S.O.S. of the air is 'May Day,' a corruption of the French 'm'aidez.' It is only used by a pilot when he is in trouble and about to make a forced landing. If he says 'May Day,' he hurries

on to explain where he is going to descend, so the nearest aerodrome can rush planes or automobiles to the spot. The call is rarely heard nowadays. Planes are put through rigid tests before they start; engines of recent design are not only more reliable, but passenger planes are usually equipped with three engines, in case one should stop; and not least important, the pilots are experienced airmen who can meet almost any emergency.

As we fly northeast along the yellow strip of French and Belgian coast, I am back again on that spring day of 1918 when I saw Calais, Dunkirk, Nieuport, and Ostend for the first time from the cockpit of a two-seater battle-plane. We had taken off from the military aerodrome at Saint-Inglevert, of which we caught a fleeting glimpse, a few miles south of Calais, just after we crossed the Channel. One of our American naval bombing squadrons made its base at Saint-Inglevert.

Dunkirk is right under us now. Over on the eastern edge of the city is a deserted flying-field, where another United States Navy Air Service squadron took an occasional well-earned rest from chasing U-boats. Five of our naval air outfits were stationed on this coast during the last months of the World War. They had three big jobs: to drop 'eggs' on German shipping in the harbors and canals around Ostend, Zeebrugge, and Bruges, as well as on ammunition depots,

railways, barracks, and munition plants; to house-clean the neighboring skies of German planes; but, more particularly, to swoop down and bounce a few cylinders of T.N.T. on every U-boat that stuck its ugly snout above the waters of the Channel or the North Sea.

We were looking for the formidable under-sea raiders on that day in 1918 when I flew up this coast. Although none appeared, I was at least rewarded with a marvelous panoramic view of the extreme tip of the mighty battle-line flung across two continents from the Channel to the Persian Gulf. It was a clear day — not a cloud in the sky except the feathery wisps of smoke from bursting 'archies.' We could see all the way from Nieuport to Ypres, and even as far east as Lens, Vimy Ridge, and Arras.

But what a change these eight years have brought! Then I was looking over the twilight of a world — a scene of devastation that only Dante could have depicted. Ruined cities, crooked lines of trenches, white pill-boxes, shell craters, red flashes from batteries across No Man's Land, winged trench-mortar shells exploding with a mighty eruption of earth; then to the left, the destroyers, mine-sweepers, and convoys crossing the Channel.

Now, instead of gazing down at the grim martial line of Beatty's warships, I watch innumerable pleasure yachts idling off Nieuport and Os-

tend. Where rows of old mines, with their vicious-looking horns, used to be swept ashore, the beach is now a fluttering rainbow, with brilliant orange, crimson, and purple umbrellas planted in the sand and gay one-piece bathing-suits of Flemish flappers, to whom the War is scarcely a memory. Not a single ruined building stands as a mute monument to the horrors of the Belgian invasion. Dunkirk, Nieuport, and Ostend, at least, have obliterated in less than a decade all marks of the World War and have resumed their normal, eat-drink-and-be-merry philosophy.

I was most anxious to see Zeebrugge again. A few days after I had flown up this coast in 1918, one of the most stirring chapters was added to the history of the British Navy. Lord Nelson himself could have been proud of the assault on the Zeebrugge Mole.

From far up in the blue sky, where our plane was almost invisible to the battle-lines below, I had crossed into occupied Belgium, and in the far distance had beheld the Mole at Zeebrugge reaching out into the North Sea like a mailed arm to protect the lair from which the submarines emerged to raid Allied shipping. On this later, more peaceful flight, I wanted to see if any trace remained of that epic fight on the night of April 22, 1918, when His Britannic Majesty's ship Vindictive stormed Zeebrugge Mole.

The object of the expedition, you may recall,

was to block the submarine exits at Zeebrugge and at Ostend, which are connected with the larger city of Bruges, a few miles inland. Bruges had long been an important base for German U-boats, because of its proximity to the English coast. Here they were safe from all attack except through the air.

Much depended on the weather. The plan of the British Admiralty was to approach Zeebrugge under cover of inky night and through mists and clouds of artificial smoke. So they waited for a foggy night when no breeze was stirring. All went according to plan until the Vindictive neared the Mole. Then a breeze sprang up and blew away the smoke-clouds. The German searchlights, fingering through the darkness, saw the approaching specter, and their shore batteries let loose a perfect hell of shell-fire. But the Vindictive kept on. She sidled right up to that concrete mole, with shells screaming through her stacks and turrets and machine-gun fire sweeping her decks. The hand-to-hand combat that took place as the British landing-party struggled fiercely and stubbornly to gain possession of the Mole will provide a rich theme for the ballad-singers of a future generation.

Systematically the survivors went about their job of destruction. The ranks were pitifully thinned when they fought their way back aboard the Vindictive. At the same time, a British sub-

FROM THE SKY WE DISCOVER THAT IT REALLY IS A LAND OF WINDMILLS

EVEN WITHOUT THE BAGGY PANTALOONS AND WOODEN SHOES, HOLLAND LOOKS DUTCH FROM THE SKY

marine, loaded to the hatches with fulminate of mercury, T.N.T., and other high explosives, ran under the Zeebrugge viaduct. Fuses were stealthily lighted, the sailors jumped, and the submarine blew up with a roar. Other ships were sunk at the mouth of the canal, the crews staying on board until the last minute, and then diving overboard into the night. The plucky survivors were rescued by the Vindictive and her consorts when they limped away.

As we fly up the beach from Ostend, Captain Olley dips down to three hundred feet so I can have my close-up view of the Mole extending into the ocean where the North Sea joins the English Channel — just like any normal breakwater unconnected with red-blooded events. Olley tips the plane to the right and points frantically. There, directly under us, with seas pounding over her, is one of the half-submerged ships the British had sunk to block the entrance to Zeebrugge. I have a thrill down my spine and salute the ghosts of heroes who have their graves here. To look down on the scene of this daring sea-battle is worth flying all the way from London to Holland in a fog!

A few minutes after passing the Mole, we approach an island. When I glance at Olley's map, I know we are drawing near the Low Countries. It is Walcheren, first of the seven islands that comprise most of the region known as Zeeland.

The first estuary over which we fly in passing from the mainland to the island is the mouth of the River Scheldt. We have climbed to one thousand feet again and can see far into Holland, and, as far as we can see, the country is dead flat — level as the face of the sea.

Holland is the westernmost extremity of that vast plain which stretches right across Europe from the Ural Mountains to the North Sea. This Kingdom of the Netherlands is nothing more than the delta of three rivers flowing into the North Sea — the Scheldt, the Maas or Meuse, and the Rhine. The estuaries between all seven of these islands in southern Holland are the mouths of these rivers. They are well christened the 'yachtsman's paradise.'

As I peer over the edge of the cockpit at the pools of water dotting these Zeeland Isles, it is easy to understand that Holland was originally a vast morass. But toilers of the sea, sturdy peasants, men and women of indomitable will and optimistic courage, have, through centuries of perseverance, transformed the morass into an earthly paradise. When we look down at Holland from the tops of those billowy clouds, which inspired Hobbema, Ruysdael, and other Dutch painters, the country resembles a gigantic garden laid out by landscape artists with a passion for geometrical designs. We fall in love with Holland at first sight from the air. Any one who

wouldn't be responsive to the charm of this gentle, half-drowsy land of red-roofed villages and canal-boats would indeed be hard to please.

At the southernmost tip of Walcheren, we fly low over the ancient Zeeland port of Vlissingen, or Flushing. Olley smiles as he points down at a statue looking out to sea. But the original of that statue made millions of Englishmen smile out of the wrong corner of their mouths! That's Admiral de Ruyter, greatest of the long line of naval heroes produced by this little nation of seafaring people. De Ruyter, some two hundred and fifty years ago, sailed his fleet right up the Thames, destroyed the British fortresses and sunk their men-o'-war. The gay London dogs of coffee-house days were almost frightened out of their lace frills and perukes. Their descendants took the Zeppelins much more calmly.

Ages ago, Walcheren was a part of the North Sea. The early Dutch, even then as industrious as the proverbial ants, built an encircling wall of earth, called Westkappele Dyke, which we now see guarding the rim of the island like the breastworks of a huge fort. Then they pumped the vast acreage dry. There ought to be a natural bond of sympathy between the Dutch and Chicagoans, who are continually dredging Lake Michigan to make more parks. Only the Hollanders pumped by hand, the Chicagoans by machinery. The difference—let any George tell you.

Right in the center of the island, we look down on a quaint city ringed with lovely shade-trees. From the tower of its town hall Zeelanders can watch ships of all nations setting sail from the Old World to the New. But Middleburg has chosen to let the restless world roll by. It has been serenely content with its silvery chimes and sixteenth-century memory, and has had no desire for progress since the ancestors of the present-day Zeelanders rested their pumping arms after performing the miracle of making land out of water.

From the cockpit of the airplane I can observe, as plainly as if I were on a sight-seeing wagon, the lovely old buildings that date back to the twelfth century, especially the Stadhuis, with its gateways, turrets, and statues of Zeeland heroes, and the market-square where the country folk are assembled. I can even make out the peculiar white headdress worn only by the women of Zeeland, as the *huisvrouwen* bob up and down, bickering over the rising price of mussels.

In rapid succession we fly over four more entrancing, velvety islands of cleanliness and calm: Beveland, Schouwen, Over-Flakkee, and Beijerland — all renowned for their spotless dairy farms, their rich crops of cereals, their quaint cities popular with artists, and the curious native costumes of their people. Here and there in the estuaries, we fly over a fishing fleet of Zeeland

'hoogars,' lazily tacking home with the day's catch.

Only planes of the Royal Dutch Air Line land at Rotterdam. The aërial expresses of Imperial Airways continue north across the country to Amsterdam. In order to save time, Captain Olley steers a course midway between Rotterdam and The Hague, cities that we are to see both from the ground and from the air when we go into the sky in ships with the flying Dutchmen.

Although we miss the great cities of the Netherlands on this journey, we are compensated by the whirling arms of hundreds of windmills, which, together with frozen canals, always symbolize Holland to those who read 'Hans Brinker' in their childhood. The section of Holland that we cross from Zeebrugge to the Zuyder Zee is marked below sea-level on the maps.

With the uneven roofs, spires, and canals of Amsterdam transformed into an old Dutch landscape painting in the soft evening light, we spiral down past cliffs of glistening mist, turning shell-pink on their edges as they are touched by the setting sun.

In white letters across the flying-field we see the word: AMSTERDAM. In huge letters on a near-by hangar roof we see the name of Holland's monarch of the air, FOKKER, greatest of all the flying Dutchmen.

When the wheels of the Handley-Page lightly

touch the grass and skim toward the waiting crowd of officials, we are amazed to see the sail of a boat close by. But we cannot see the boat itself because it is higher than we are. The Dutch and British aviation representatives, who shake hands with us, explain the enigma. The Schipol Aerodrome is actually below sea-level and behind a dike, with a canal *over*looking it. As the freak aerodrome of the world, it takes the blue ribbon.

Before motoring to our hotel in the center of Amsterdam, the Dutch station-master invites all the passengers to a near-by inn. Although Holland is famous for its windmills, butter and cheese, artists, peace tribunal, and flowers, it has one drawback. Its inhabitants are afflicted with agues, pleurisies, and rheumatism. But they have a sovereign remedy. The station-master treats each of us to an innocent glass of colorless liquid. We drink it and agree that Holland is also famous for Schiedam gin. We have forgotten all our bumps and panics and air-sickness, and there is not a passenger among us, including my wife, who does not feel brave enough to fly straight on to Moscow!

CHAPTER V

A SIR FRANCIS DRAKE OF THE AIR

Our first flight in Europe was a memorable one, if for no other reason because, just as we sped through the sky above the white cliffs of Dover, we passed another airplane crossing the Channel from France — a plane piloted by a pioneer of empire who may one day rank in history with Drake, Raleigh, and Captain Cook. This modern Elizabethan adventurer was Alan Cobham (now Sir Alan) in his famous De Haviland '50,' on the last lap of one of the greatest air voyages ever made by man.

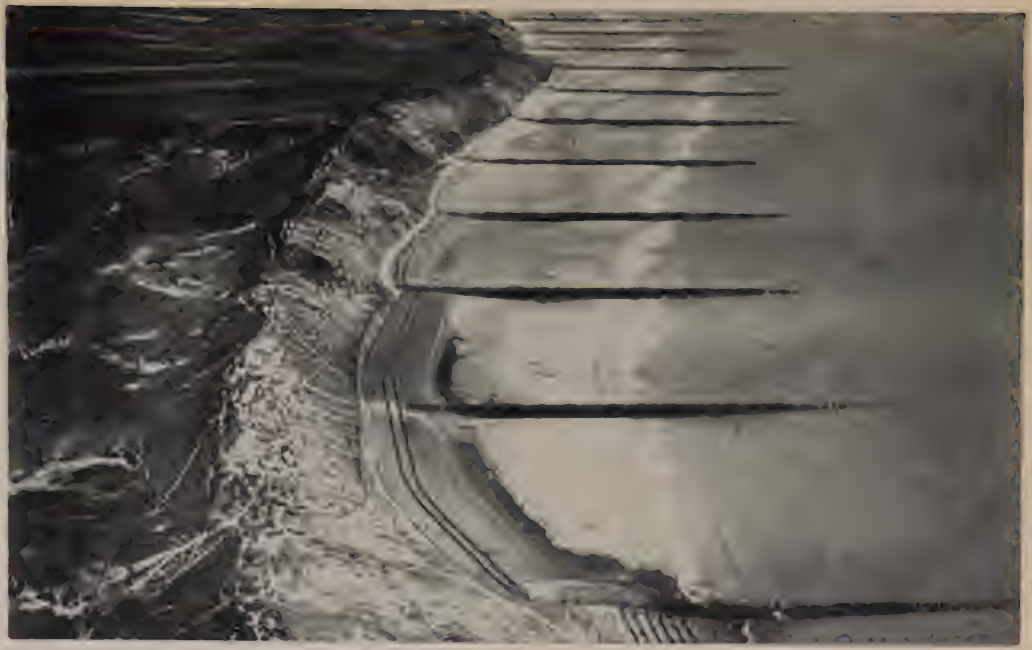
In less than an hour after he waved to us, Cobham swooped down out of the sky at Croydon, serene, smiling, and unconcerned, after his flight from London to Egypt, from Cairo to Cape Town, and back again. Seventeen thousand miles he had flown, twelve thousand of which had taken him back and forth across the length of Africa, in order to survey an airway that will bring some of the most inaccessible corners of the British Empire within a few days' flight of London.

The successful blazing of this trail across the Dark Continent deserves to rank with the first trans-Atlantic flights, the circumnavigation of

the globe by our American Army airmen, and Sir Ross Smith's aërial voyage from England to Australia.

Every one in the British Empire knows of the exploits of Alan Cobham, but the rest of the world is just beginning to hear of them. In making his seventeen-thousand-mile journey in an ordinary De Haviland passenger plane without even changing his engine, Cobham had set up such an important mile-post in aërial achievement that I decided to fly back from Holland a few days later and hear from his own lips the story of his African flight.

We met at the Royal Aero Club, just off Bond Street. He greeted me in a friendly offhand way — this typical fair-haired Englishman, undersized, with an accent suggesting that he might have been born within the sound of Bow Bells. Cobham impressed me as a dynamic young man who keeps his feet on the ground, even though most of his life is spent in the air. I can remember, only a few years back, when people in London smiled sarcastically when Cobham's name was mentioned. His natural *flair* for headline publicity was criticized as a showman's gesture. He has a lot of the Barnum in him. But even the scoffers take their hats off to him now, for as a blazer of airways and a propagandist for aviation, he has written his name against the skyline of four continents.



OVER SEA FENCES AND DYKES WE FLY FROM THE HOOK OF HOLLAND TO THE ZUYDER ZEE

NEAR THE HAGUE WE LOOK DOWN ON THE ROYAL PALACE OF OUD WASSENAAR WITH ITS LAGOON AND VELVETY LAWNS

'The possibility of attempting the journey from London through Egypt and the heart of Africa to Cape Town had long stimulated the imagination of flying men.' Cobham warmed up to his subject as he restlessly climbed out of his big club chair and perched, birdlike, on its arm. I myself had been dreaming about it for several years, but the dream did not materialize because it was painfully slow and exasperating business to obtain financial backing for what was universally regarded as a hazardous undertaking.

'You may recall that two officers of the Royal Air Force, Pierrie Van Ryneveld and Quinton Brand, were knighted a few years back for getting through the air with much difficulty from Egypt to the Cape. But aviation has made great strides since their venture. I was confident that by crossing Africa from end to end and back again, I should convince even the skeptics that the day has arrived when airways should provide rapid transportation to the most remote jungle stretches of "darkest Africa."

'Finally I rounded up a score of private companies to back me, all of them concerns interested in some phase of aeronautics. After having a few supplies cached in uncharted regions, arranging for special landing-grounds, and a multitude of other details, I was ready to start on the 15th of November, 1925.'

Cobham was already a veteran at long-dis-

tance flying. At the start he was a pilot for a joy-riding concern that played the honky-tonk towns of England flipping yokels around their native heaths at ten bob a head. Even in those days he demonstrated that he was a born showman by his publicity methods. He would offer free flights to the two flappers who came in first in a race to kiss the Shell Company gasoline agent — without the agent's consent or knowledge. He also had won many cross-country races, and had run a De Haviland aërial service, taxiing business men and travelers across the skies to Stockholm, Belgrade, and Madrid. His experiences had been amusing and varied. He was once assigned to whisk an American tourist over to North Africa, up the Nile a bit, and then to Palestine. As they were flying over Jersualem, the American in the cockpit shouted out to Cobham passages from his Gideon Bible, to which sacred guidebook his eyes were glued, scarcely shifting to the proverbial hills. On another occasion an old lady lost her head, jumped from the cockpit, crashed through the lower wing, and stuck there astride the main spar. Cobham's plane had descended on most of the airdromes of Europe, North Africa, and Asia Minor. He had even taken Air Vice-Marshal Sir Sefton Brancker from England to Mesopotamia; then on to India and Burma and back again — a distance of some eighteen thousand miles — the first aërial round

trip from England to Rangoon. Hence, his memorable African flight was not beginner's luck; it was carefully planned and carried to a triumphal conclusion by a scarred and experienced campaigner of the air.

Cobham was accompanied by his old associate Mr. A. B. Elliott, an expert aërial engineer and 'trouble-shooter,' and Emmott, a photographer, who was to make a pictorial record of the flight.

'When we set out from Stag Lane Aerodrome on the 15th of last November,' Cobham went on with his story, 'we carried, in a special compartment underneath the cabin, an extra propeller; a number of small spare parts; complete photographic supplies; a gun, rifle, and revolver, in case we were forced to land in an uninhabited part of Africa; and, of course, emergency cooking utensils and rations. Another small compartment back of my cockpit was filled with sun-helmets, light tropical clothing, and the inevitable evening clothes without which no self-respecting Englishman will venture even into tropical Africa.

'Before leaving England we had to come down at Croydon to pass the customs and go through the usual official formalities. The fog was so thick when we arrived over Croydon from the De Haviland plant that rockets had to be fired to point the way to the landing-field.

'Stormy weather delayed our progress across

Europe, but the second evening found us at Marseilles. Through a howling gale we flew along the Riviera and spent the third night at Pisa. In the three succeeding days we flew the length of Italy to Taranto, swept across the Adriatic, over Corfu and around the coast of Greece to Athens; four hundred and eighty miles across the Mediterranean to the coast of Africa, and another three hundred and ninety miles over the desert to Cairo. Five more flights, and we completed the journey of eleven hundred and fifty miles up the Nile Valley by way of Luxor, Karnak, the Valley of the Kings, the great Assuan Dam, and across the Nubian Desert to Khartum in the Sudan.

'Our course in Africa thus far had been over a country where airplane service could be provided with one hundred per cent regularity. In two days travelers could be taken from Cairo to districts far south of Khartum in Central Africa, which cannot be reached in less than three weeks by any other means of transportation.

'From Khartum we flew four hundred and twenty miles south to an airdrome that had been specially prepared for us on the edge of the Shulluk village of Malakal. Much to our surprise the natives displayed no interest in our plane. They indifferently accepted flying as one of the mad things the white men do. When the chief of the Shulluks was told that we had flown farther in six

days than he and his tribesmen could walk in a year, he merely put his hand to his head with a resigned and bored gesture, indicating that it was a pity the white men had gone crazy.

'In spite of their poor opinion of us, the Shulluk warriors staged a war dance in our honor. The contrast was startling between their primitive dance and our twentieth-century airplane that served for a back-drop. The warriors were decked out in leopard skins, and their long hair, matted with clay, formed fantastic towers. Their faces were painted, their bodies smeared with ashes. Each warrior carried a spear and shield.

'Chanting a weird battle-cry of the jungle and shaking their spears, they danced toward us. We stood with our backs to the plane, admiring their magnificent brown bodies and their superb muscles, as they side-stepped, lunged, and feinted with their spears. Gradually the stamping grew more furious and the singing wilder.

'Suddenly, with deafening shouts, which made us fear that they had worked themselves into a frenzy beyond control, they rushed toward us. Had it not been for the comforting and official presence of the Commissioner, we should have escaped under the protecting wing of the plane. But just at the terrifying moment when I expected them to run us through, they came to a halt, their spear-points quivering only a few inches from our faces.

'After another jungle *revue*, billed as the Lion Dance, I was expected to do my part. So, in accordance with custom, I bought a bull for their feast.

'The next flight of three hundred and sixty miles took us still deeper into the heart of the vast African continent, to Mongalla, near the Equator. Here at the extreme southern tip of the Sudan, our route stretched over the mysterious swamps known as the Great Sud, through which the Nile somehow finds its way. Near the end of this flight, Elliott spotted a herd of water buck. In order to give Emmott a chance to get a good picture, we dropped twenty feet from the ground, but the bewildered animals nearly jumped from under their horns as they fled in abject terror from the roaring monster of the air.

'Our next halt was nearly a mile above sea-level on the shores of Lake Victoria Nyanza. Here at Jinja, in Uganda, thousands of natives swarmed out of the forest to stare at us. Then hugging the shore-line of Victoria Nyanza, we chased in and out of fleecy clouds formed by steam rising from the jungle, bumped over the Equator, and landed five miles "down under," as the Australians say.

'British officials, hunters, and settlers welcomed us at every stop. Some of them had been marooned in the heart of Africa for such a long time that they were as ignorant about aviation

as any Tanganyika or Bechuanaland aborigine.

'One dear old lady in Kisumu asked, "Now, Mr. Cobham, how do you manage to sleep at night?"

'"O, we either put up at a rest-house or some kind person invites us to his bungalow," I replied.

'She looked dazed and there was disappointment in her voice. "Really, I hadn't thought of that. So you do come down at night, then?"

'It now takes a month to travel from England to Kisumu, but, within a few years, when a regular air line is in operation from Cairo to the Cape, the distance should be covered in about one week.'

Cobham also explained another important rôle the airplane will play in the opening-up of Africa:

'From Kisumu we flew to Tabora in the heart of Tanganyika Territory. Here we sped over the dense forest areas that stretch in all directions, piercing deep into Rhodesia. Beyond Tabora the country for some hundreds of miles has been purposely depopulated by British scientists, who are trying to stamp out sleeping sickness by stopping the migrations of the dreaded tsetse fly. This pest travels only short distances. By means of aërial photographs it will be possible to survey vast forest areas, find out just where the narrow necks of forest are, cut them, and thus isolate the tsetse fly in islands of forest. For the carrier of

sleeping sickness operates only in the somber regions of perpetual shade and has never been known to venture into the sunlight.

'On the way from Lake Victoria Nyanza to Palapye Road in Bechuanaland, we passed over the worst stretch of our whole journey. Ninety-eight per cent of the time a forced landing would have crushed us to disaster in dense forest.

'But our greatest thrill and our one narrow escape took place a thousand miles farther south. With stops at Abercorn, N'Dola, and Broken Hill, we pointed our course toward Livingstone. Nearly three hundred miles out, I saw dimly on the horizon, above the forest, what appeared to be the smoke from two or three fires. But, as we drew nearer, I noticed that this smoke, instead of rising continuously, would suddenly disappear and a minute later reappear a few yards away. Gradually it dawned upon me that the smoke was clouds of spray rising from the great Victoria Falls.

'Presently we saw the River Zambesi flowing eastward through the forest, take a half-right turn, and completely vanish. This, I knew, was the spot where the waters rushed over the brink of the chasm. We calmly ignored the crowds we could see were waiting for us at our temporary landing-ground at Livingstone, and we pushed on a few miles, eager to view the celebrated African Niagara.

ALAN COBHAM (ON THE LEFT) AND HIS CREW

SHULLUK WARRIORS OF CENTRAL AFRICA

'ON OUR LEFT THE WATERS OF THE ZAMBESI ROLLED OVER THE BRINK'

'The Zambesi at this point is more than a mile wide. As we approached from the north, we could see nothing but a long clean-cut line where the river seemed to be swallowed into the earth, whence huge clouds of spray were continually rising. In a few minutes we soared above the brink. Looking down, we had our first glimpse of the vast volume of water, a mile and a quarter long, falling from a height as great as that of the cross of Saint Paul's Cathedral into a deep chasm from which there is only one small gorge outlet.

'We were flying too high to get a satisfactory first view of the mighty avalanche of water that topples over into the Zambesi Gorge. The natives call this the Smoke Falls, because of the banks of spray that rise night and day from the ravine into which the great river drops. The spray rises to a height of over a thousand feet and is so dense in the flood season that the falls are often hidden behind a curtain of mist. In order to give Emmott a chance to crank off a few hundred yards of film at close range, I decided to fly right down above the brink.

'We had been flashing fifty yards above the upper edge of the cataract for perhaps a quarter of a mile, when suddenly we were enveloped in a heavy cloud of spray. Peering through the cabin window, I saw Emmott grinding off film with more precision and concentration than he had ever displayed before, for he realized that he

would never get a chance at more dramatic scenic material.

'A few seconds later we were plunging through another bank of spray. Below was the chasm. On our right loomed the great railway suspension bridge that spans the outlet gorge. On our left the waters of the Zambesi rolled over the brink. Ahead were sheer walls of rock with tropical forest beyond. At this moment our engine started to splutter, a thing that had not occurred since we took off at London. Our hearts began to splutter also.

'Although the engine kept on spluttering, she didn't cut out completely, so I pulled the lever control back, and with our enormous reserve power we climbed quickly. The engine continued to miss and bang. We knew that if she stopped, we should be in for it! In flying so close to the brink, the spray, which was far heavier than we had anticipated, had been sucked through our air-intake pipes into our carburetor. Unless the propeller kept turning over to provide sufficient momentum to carry the engine on until the spray passed through, we were headed for a spectacular finish. I opened the engine full out and climbed as high as possible to avoid the falls and get far enough above the forest to be within gliding distance of the landing-ground at Livingstone. We breathed a sigh of relief when we came down safely at Livingstone, and soon forgot our ad-

venture in the enthusiasm of our reception. But I made a mental note that an airplane is not a submarine, and that never again would I fly low over Victoria Falls.'

From Livingstone, Cobham and his companions winged their way another sixteen hundred miles via Pretoria, Johannesburg, Kimberley, and on to the Cape of Good Hope. During this concluding stretch of the flight, they were in civilized land, the rapidly growing Union of South Africa. In addition to flying, enduring receptions, speaking four or five times a day on the possibilities of commercial aviation, Cobham had to hire a corps of stenographers to keep pace with his correspondence.

Then, in the same De Haviland, with the very same engine with which he had pioneered the long African air trail, he turned right around and flew all the way back from the Cape to Cairo, across the Mediterranean and across Europe to London.

One of the fast mail steamers that ply between South Africa and the British Isles was sailing from Cape Town the same day that Cobham started north, so there was a race between the Windsor Castle and the De Haviland.

When we waved to Cobham in the sky above the Channel, he had already won the race, for the Windsor Castle was still many hours from her goal. This friendly competition between air and water opens up the tremendous possibilities of

commercial air lines, for the mail steamer had to travel only fifty-three hundred miles against the eighty-five hundred that Cobham covered. Moreover, the steamer kept on its course day and night, while the airplane was rarely in flight more than eight hours out of the twenty-four, and was, in addition, handicapped by pioneering conditions.

If Alan Cobham, in a standard British plane, without changing an engine, can fly seventeen thousand miles across Europe, the Mediterranean, and the whole of Africa, without a mishap, not even an adventure, except in playing around the brink of Victoria Falls where he had no business to be, then surely no one should feel timid about flying in Europe. Africa is still pioneer country from the aërial point of view. In Europe the ground organization is efficient, weather reports are so complete that pilots can fly over or around storms, the pilot is in constant communication with near-by airdromes through his wireless telephone. No one need hesitate to fly in Europe, where accidents are less frequent than they are on many of the Continental railways.

Sir Alan Cobham is a maker of aërial history. After returning from Africa he blazed another great pioneer trail from England to Australia. Unfortunately, his devoted companion and trusted engineer Elliott can no longer accompany

him. While they were flying over the Garden of Eden in Mesopotamia, a Bedouin 'just for fun' took a pot shot at the plane with his rifle. When Cobham looked down into the cockpit, he saw Elliott writhing in his death agonies. The Bedouin had shot true in his little game against the air birds.

Both for travelers who contemplate flying, and for those who are more directly interested in the development of commercial air lines, Alan Cobham makes this interesting observation:

'Nearly all of our available statistics on commercial flying are based on the operation of airways in Northwestern Europe. With the possible exception of the remote islands of the North Pacific and the North Atlantic, this is the worst region in the whole world for aviation because of the fickle and nasty weather.

'Our best efforts have only resulted in the maintenance of an eighty to ninety per cent regularity between England, France, Belgium, Holland, Denmark, and Germany. But on nearly every other prospective air route in the world it will be possible for experienced pilots to maintain a record of one hundred per cent. Although more has been done toward developing passenger air lines in Northwestern Europe than in all the rest of the world combined, lines could be launched almost anywhere else with greater promise of success. For instance, pilots who have flown

air liners from London to the Continent now look upon flying over the New Imperial Airway from Egypt to India as a rest cure.

'The future of the British Empire,' says this pioneer of the skies, 'depends upon the growth of Imperial air routes. Henceforth the nation that controls the air will control the earth.'

Just as the determined and plucky Hollanders once fought with the British for colonial empire, so now are they vying with each other for supremacy in the air, and our next flight is to be with the flying Dutchmen.

CHAPTER VI

BATTLE-FIELDS OF EARTH AND SKY

If you have lost your appetite, try flying. You will get it back in a hurry. At any rate, you will if you cross the Channel on a raw and gusty — and bumpy — day. Two hours of the quivering, throbbing vibration of those tremendous motors exercises and massages as many muscles as a ride on President Coolidge's electric hobby-horse, or an afternoon in Jac Auer's Health Studio at the Biltmore. But with all our yearning for food, when we slid below sea level and landed at Amsterdam, we were unable to cope with our first Dutch meal.

From the City of Diamonds we caught the shuttle train for the city where dwells the Dove of World Peace. The waiter at the Twee-Steedan in The Hague asked us if we desired the regular *table d'hôte* dinner and we eagerly assented, little dreaming of the ordeal ahead. If what they brought us was just a normal Dutch dinner, then we hope we never have to face a Dutch banquet! Here are the dishes that were set before us:

First course — Apéritif

Hors d'Œuvre Suédoise: boneless sardines, shredded meat with peas and carrots, stuffed eggs, fresh asparagus (in February), shrimps from the Zuyder Zee, sliced tomatoes in oil,

mixed mustard pickles, potato salad, shredded celery, paté de foie gras with truffles.

Second course —

Oxtail clair, a huge silver bowl of soup, enough for an army.

Third course — Barsac

Suprèmes de Barbue Florentine: fish with mashed potatoes and spinach.

Fourth course — Burgundy

Cuissot de Veau à la Bougrietière: a full-sized roast of veal with six vegetables: Brussels sprouts, French fried potatoes, braised chicory, grilled tomatoes, peas, carrots, and braised onions.

Fifth course —

Caneton rôte rouennais: compote riche, roast duck with a bowl of five kinds of canned fruit: plums, pears, peaches, apricots, and pineapple.

Sixth course — Champagne

Homard frais de Helgoland sce. mayonnaise: a whole lobster with mayonnaise, and a lettuce and grated yolk of egg salad.

Seventh course —

Pouding chipolata sce. marasquin.

Eighth course —

Fromage: Edam, cream, and Swedish.

Ninth course —

Fruits: oranges, tangerines, and bananas.

Tenth course —

Dessert: dried figs, raisins, ginger, and assorted nuts.

Eleventh course —

Coffee, Bénédictine, Sumatra cigars.

It took two hours for three waiters to serve this dinner, to the accompaniment of soft Hungarian music. The total bill came to less than four dollars.

Our visit to The Hague was mainly for the purpose of meeting a man who has done more than any other one person to develop commercial aviation in Holland. His name is Albert Plesman, and he is the Dutch Mussolini of the air.

FOR SEVEN YEARS NOW THE PLANES OF THE ROYAL DUTCH AIR LINES HAVE BEEN FLYING REGULARLY BETWEEN THE CITIES OF THE LOW COUNTRIES AND LONDON, BRUSSELS, PARIS, HAMBURG AND COPENHAGEN

MYNHEER PLESMAN

Director of Koninklijke Luchtvaart Maatschappij voor Nederland en Koloniën (translation: the Dutch Mussolini of the air)

For seven years he has fought to put Holland on the air map of Europe. He dreams of the day when his little country will play a part in the commerce of the air as important as the Netherlands once played as a seafaring nation. That he has accomplished wonders is evident by the fact that his firm, Koninklijke Luchtvaart Maatschappij voor Nederland en Koloniën, stands very nearly on a par with Imperial Airways of Britain, Deutsche Luft Hansa of Germany, and the French Air Union. He has brought this about despite the fact that his Government has granted him an annual subsidy of only $125,000, while each of his competitors receives about five times that amount.

Physically and mentally Mynheer Plesman is of the dynamic, masterful type. He looks and acts like a Colorado mining king or an Australian sheepman. He pounds tables with his fists, uses strong language, drinks Dutch beverages that are real fire-water, has clear, cold, alert blue eyes, and a pair of shoulders like a full-back's on an All-American football team. Our own embryo air lines ought to borrow him for a few years. He knows as much about operating transport lines with ships of the skies as his fellow countryman, Anthony Fokker, knows about building them.

'What immediate future do you see for commercial aviation?' I asked Plesman.

'Flying as a regular means of transportation

will come into its own within two or three years,' he replied. 'I have four reasons for prophesying this:

'First, because there is almost no limit to the speed at which man can travel by air.

'Second, because there is so much room in the sky that we shall never be troubled by traffic jams or limited in the number of planes used.

'Third, because there are no bridges to give way under strain, no roads to wear down and practically no limit to the loads carried.

'Fourth, because it should soon become the cheapest means of transportation, since it is the form of travel involving the least friction — obviously far less than ships ploughing through seas or trains passing over rails or automobiles traveling over roads.'

The director of the Royal Dutch Air Lines added that he believed two things were necessary to make flying popular: ample capital to tide over the first lean years, and public confidence in the safety of air travel.

A syndicate of leading Dutch bankers and steamship magnates are behind Plesman and his line. Added to this is the small subsidy granted by the Dutch Government.

For seven years now the K.L.M. planes have been flying regularly between the cities of the Low Countries and London, Brussels, Paris, Hamburg, and Copenhagen. In all that time

they have had but three serious accidents. In April of 1924, a Dutch plane left London for Amsterdam with two passengers on board. Neither plane nor pilot nor passengers were ever heard of again. Just what happened no one knows. The Channel was hidden in a dense bank of fog, so the plane may have descended too low and plunged into the water. A year later, in May, the morning Fokker bound for Paris encountered heavy weather just south of the Franco-Belge frontier. Skimming low over the Wood of Landrecies the plane hit a tree and the pilot and three passengers were killed outright. The third accident occurred during the summer of 1927 when a plane on the Amsterdam–London run, due to some technical flaw in the construction of the ship, dropped out of control. Although the mechanic was killed, the pilot and passengers suffered only minor injuries. But when we compare this record with the ten thousand or more fatal automobile accidents in New York City every year, and the many railroad crashes, it seems as though flying with the Royal Dutch Air Line is about as safe as any existing means of travel.

Some of the Dutch pilots have had more than three thousand hours in the air at the controls of commercial ships of the skies. K.L.M. seems to be an extraordinarily efficient concern, far more so even than the average railroad. During the

summer months the Dutch passenger and freight air liners fly with a regularity of one hundred per cent. The K.L.M. Company comes the nearest to being a financial success of any of the major air lines of Europe.

Before flying south to Belgium and France we went out to Waalhaven Vliegstation, as the Rotterdam aerodrome is called, and made a short flight over the city with a flying Dutchman who has been up in the air most of the time for eleven years. Lieutenant Nieuwenhuis was once a Dutch naval flier. While stationed in the East Indies he often flew over the volcanoes of Java, and across vast unexplored sections of central Borneo. In order to demonstrate what a simple matter it is to handle one of the K.L.M. passenger planes, after climbing to about three thousand feet above the canals of Rotterdam he turned over to me the control of the plane. After I had flown her for a while he asked me to step back into the cabin and then invited my wife to come out into the cockpit. Although she had never had her hands on the wheel or 'stick' of an airplane before, she hadn't the slightest difficulty in keeping the plane on an even keel or even in righting it after diving and banking. The thing almost seemed to fly itself, and Oud Luit ter zee Nieuwenhuis said that if a pilot took his hands off the controls, the big Fokker would not fall, but would merely flutter to the ground like a leaf.

THE AMSTERDAM—PARIS MORNING EXPRESS, OVER ROTTERDAM, WITH OUD LUIT TER ZEE NIEUWENHUIS AT THE STICK

WITH A SHORT RUN AND A JUMP WE LEAVE THE CANALS OF ROTTERDAM FOR THE BATTLE-FIELDS OF BELGIUM

A short run and a jump, and we're off for Brussels. There is no altimeter in the cabin of this Fokker, but in ten minutes we have climbed to a thousand feet and are over open country. There's a wee church surrounded by a huge graveyard. Curious how many graveyards you see from the air. On your first few flights you seem to see nothing but rows of tombstones. Clouds of mist flash past us at great speed. Ah, there's the sun again, streaming down through a slit in the nimbus — like the Eye of God, its rays spreading in a fan. Now we are in another vast cloud, much whiter than the first. Five hundred feet above us is another white layer and through it the sunlight is diffused. On the horizon are strips of blue with streaks of gold between. I have never seen an effect quite like it.

A young lady sitting in front of me has lost all interest in the scene. Fifteen minutes ago she was cheery. Ten minutes ago her smile vanished. Now she has 'mal d'air,' and has slumped in her seat.

The clouds below are thinning out a bit and look like millions of separate fluffs of cotton suspended in mid-air. Every other second we catch glimpses of the earth. That makes it easy for the pilot to keep his bearings without using his compass. We must be near Brussels. The plane dips her nose into the clouds and sinks below them.

There is a great city off to the right. But it can't be Brussels. The pilot holds his map to the window with his finger on Antwerp. So we are above the city of sieges, and in imagination we hark back to the dark days of the Religious Wars. Do you see that procession of moody figures passing into that cloud ahead of us? There go the somber Duke of Alva and the Princes of Orange. After them come the magnificent Don Juan of Austria, who was the Governor General for Philip II in the Low Countries and who afterwards sealed the triumph of the Christians over the Turk at the sea fight of Lepanto.

There was a revolt against the religious oppression of Spain. And between the military companies of burghers and the flooding of the dykes, things were going badly for the King. Then came the brilliant Alexander Farnese, Duke of Parma, and soon Antwerp was besieged. It was a long and bitter contest at the city walls, but finally beleaguered beyond further endurance, the defenders surrendered.

More than three centuries later Antwerp again girded itself for defense. This time the ancient city walls had nothing to do with the case. It was now a matter for the modern forts of Brialmont. The Germans, with the howitzers that had so swiftly demolished the powerful fortresses of Liège and Namur, were advancing on the town. To the rescue came the imaginative Winston

Churchill and a corporal's guard of British marines. And now a bombardment began. It was the first time that a modern metropolitan city had been confronted with the might of modern cannon. For several days Antwerp endured a nightmare, and then the Germans marched in.

We are nearing Brussels now. The palace and park are just to the right. Yonder is another cemetery, a huge city of the dead. Graveyards everywhere! We land on the Sabena field on the northeast outskirts of the city. The word Sabena is made up of the initial letters of the words forming the name of the Belgian air line. A Farman biplane on the way from Paris to Amsterdam alights a few minutes after us, and a De Haviland passes overhead without stopping.

We were in no hurry, so at the Brussels aerodrome we climbed aboard a British plane for a spin over the battle-fields of Belgium. It is a De Haviland-34, engined with one Rolls-Royce Eagle VIII. This is the motor that took Alcock and Brown across the ocean on that memorable first non-stop trans-Atlantic flight, and that took Sir Ross Smith from London to Australia in 1919. The pilot, a Mr. W. Armstrong, is a fine type of young Englishman, with something of the look of a poet. We have quite a talk with him and find that he is as intelligent as he looks. During the war he flew a bombing plane, and his squadron

was stationed near Nancy. He carried explosive 'eggs' on some of the longest bombing raids of the war and was one of a party that pelted Frankfort, over which he now occasionally flies on peaceful missions. On each of two of his longest raids twelve planes went out and four failed to return. One night an observer had his hand out over the side of the cockpit to fire a signal to the others. A piece of shrapnel from an Archy tore the Véry pistol right out of his hand.

But most extraordinary of all, he tells us, was the case of one of the pilots shot down in 1918. He was captured by the Germans, but after a while made his escape from prison. He walked part of the way across Germany by night, sleeping by day and eating raw turnips and potatoes from the fields. It was a black night when he made his way stealthily to where he reckoned the German lines were and with infinite precaution crawled ahead, through trenches and past dugouts and on into No Man's Land. On and on he crept through the hours of darkness, looking for the friendly trenches and trying to make sure that he had got well past the German lines. He noticed that everything was curiously quiet. It was mysterious, ghostly. When day came he met a couple of French villagers, and spoke to them. They told him the Armistice had been signed and the war had been over for a week!

This pilot who is to fly us over Flanders Fields

talks of patriotism, and says he puts love of country on an equal plane with love of home. He hates Bernard Shaw and loves Kipling.

When you are splitting the air at a hundred and ten miles per hour you don't have to fly many minutes from Brussels before you come in sight of battle-fields. I wonder what our very patriotic pilot thinks as he soars back and forth, day in and day out, over this particular stretch of earth below?

No place is more sacred in English history, for this is where the English first met the Germans and where a century earlier the battle of Waterloo was fought. In the space of half an hour you can look down and see the two campaigns, one after another, and recreate the scenes in your own mind in a way that would be quite impossible on the ground.

The British and Prussians are marching to join each other. Back in Brussels from whence we have just flown, Wellington and his officers have danced through the night at the famous ball before Waterloo, and have hurried away to the impending struggle. Marching up from the south is Napoleon's army, advancing for the favorite Napoleonic strategy — to strike between two armies just as they are ready to join. Bonaparte is up ahead, just in front of us at Charleroi. See those distant steeples? The British are drawn up a few miles this side. We are right above them

now. French skirmishers are opening fire. Napoleon, consummate strategist that he is, hurls the bulk of his army against the Prussians before they have a chance to join Wellington. Napoleon strikes again and again. Then his cavalry swerves and attacks the English, who retire fighting as night falls. Comes the second day — the fatal day for the great Corsican. Napoleon, having disposed of the Prussians, as he thinks, now turns to crush the British here at Waterloo. His strategy of beating his enemies one after another seems to be succeeding again. Shortly after daybreak the French start hammering Wellington, but the British hold. Marshal Ney leads a mad cavalry charge. Napoleon changes the position of his guns. The British squares wither under the heavy fire. The critical moment of the battle is at hand. The Emperor throws in his last reserve.

But what's this? What troops are these coming from the west? The Prussians! Blücher has made a magnificent forced march. The regiments that Napoleon assigned to pursue the retreating and defeated Prussians must have dallied. At any rate here comes Blücher in the nick of time. Without stopping to rest he strikes at the French flank. The tide turns. Bonaparte's hour has struck. Gone now are those dreams of world empire. His army crumbles, breaks, and a moment later is in wild retreat.

But we're beyond the battle-field of Waterloo

now, and the hands of time on the instrument board of our airplane swing round denoting the passage of another ninety years.

A gray flood is sweeping through Belgium. Near the field of Waterloo wait the defending armies. We see them stationed before Mons down there to our right and over there at Charleroi to our left. This time Mars has reshuffled the contending nations. The allied forces of Britain and France prepare for battle. Their position, they reckon, is strong, for over there is Namur, one of the strongest fortresses in all Europe. The British and French base their defense on it. It will hold the Germans, and give the Allies an opportunity to bring up their reserve forces. We can imagine the smoke and flame that made an arc to the north of Namur that day in 1914. The great Skoda howitzers are at it. The Germans are hurling tons of steel at Namur. They blow the forts right out of the ground. The defenses that had been expected to hold out indefinitely fall in ten hours.

And now the German flood is rushing upon the astonished French and British. They are overwhelmed. The lines of Mons and Charleroi break. The famous retreat on Paris begins, to be stopped only on the Marne.

We are steering northwest, just missing Mons. But from the landscape my eye shifts to a sign on the front wall of this cabin. It's a comforting

little sign, and aside from the clause about smoking it ought to make a hit with all neophites at this air traveling game:

'This aeroplane is inherently stable. Uneven motion is caused by wind gusts, and is not in the least dangerous. [But when some people get airsick, or seasick, they don't give a hoot whether they live or die.] Passengers should always sit in a relaxed and easy position. [Just try this some day when you are flying through black clouds with lightning crackling about your ears.] Smoking strictly prohibited. The aeroplane will float in case of a forced descent on water, and emergency exits are provided in the roof of the cabin.' Happy thought.

Above, on the low cabin ceiling is a circle marked 'emergency exit.' All one has to do is to rip the canvas away, for which a flap is provided. Then it would be easy to climb out. But I have never heard of a passenger being obliged to resort to this.

We see a large city on our left. It is Lille, and again we feel we ought to have Clio, muse of history, to tell us about it.

Over Ypres and along the Yser — the bloodiest battle-field in all history. The industrious Belgian peasants have rebuilt their homes and restored their little farms to much the same appearance as before the war; yet here and there we pass over stretches still scarred and burned

and pockmarked. The old shell holes are small indentations from up here, some made by the 75's and some by the big guns. Hundreds are full of water. On rainy days you can see millions of them from up here. Even though a shell hole gradually becomes obliterated, the earth remains depressed just enough to form a pool when it rains.

During the Middle Ages Ypres had been a wealthy city, the center of the Flanders cloth trade. Its industrious burghers sallied out one day against the Duke of Artois and his knights, and so valiantly did they fight that they returned with an array of golden spurs taken from the heels of fallen knights. Then Ypres sank into obscurity until the World War when three great battles were fought here.

After the first check before Paris, the Germans made another try for the Channel ports. The British lined up around Ypres to hold them, and it was indeed a thin red line. With overwhelming force the Germans struck at the Tommies. It seemed like a forlorn hope. But Allenby's cavalry cut in at a critical moment and held up the enemy, the same Allenby who later was to free Jerusalem and sweep the Turk from the Holy Land. At Ypres in those autumn days of 1914, it seemed as though the fight was lost. The British had defended their lines with desperation, but now the break had come. Down there under our

wing is Menin Road. It was there that the line was giving way. The brigadier general in command had thrown in his last reserve, and it was insufficient. He rode off to headquarters to report that his men could hold no longer. On his way he stumbled on a battalion belonging to another command. Pure accident! A lucky break! He rushed the men to the cracking line, and they provided that last ounce of strength that so often decides a great issue. The line held just long enough for the reserves to come up, and the British steadied. The German drive for the Channel ports was stopped.

The second battle of Ypres began one of the most desperate stages of the war. As we look down from our plane we can imagine the scene. There are the two opposing lines of trenches. Now a faint greenish haze, a mysterious low cloud, creeps from Roulers towards Ypres. It was the first gas attack. The Germans loosed a cloud of chlorine gas that blew with the wind and swept over the trenches of the Canadians. Men, thousands of them, gasped and died in agony in the suffocating fumes, or ran back staggering and choking. A wide gap was opened in the line, as everything over which the gas cloud swept was stricken. The Germans might have gone through and cut the British line in two, but the success of their gas attack also took them by surprise. They were not prepared for a major advance. They

occupied a stretch of territory, but had no force massed for a decisive stroke.

Then along about the end of 1917, when the strength of all combatants was strained to the breaking, the British opened a tremendous assault on the German lines for the third battle of Ypres. Over there we can see Messines Ridge, where the most striking event of the long fight took place. One of the most savage bombardments of the war blew the top off the hill. The German trenches disappeared like lines on butter. As we look down the hilltop is green and quiet, but that day the horrors of hell were loosed on it. A rainstorm broke and the British advanced in a sea of mud. And now the German cannon blasted them, and deluged them with gas. They struggled up that now pleasant slope, through a poison-filled bog. The ridge was taken. This third battle of Ypres was the greatest in which British armies had ever been engaged. Haig's losses were 230,000 men. And the gain? A few square miles of unimportant ground. The weather fought on the side of the Germans and the attack missed fire.

The Ypres salient included a stretch of territory six miles by ten that was under shell fire day and night from 1914 to 1918. A million soldiers of Britain were wounded here and 5000 were killed for every month of those four terrible years. Down there at Menin Gate is the new

memorial and on it are the names of 56,000 men whose bodies were never found. '*Ad majorem Dei gloriam.*'

Dixmude up ahead of us, over there at the other end of the rainbow, was perhaps the most pathetic place of all. There the Belgians, at the time of the first Ypres battle, held the line in some of the war's most savage fighting, defending the last inch of their native land. South of Ypres we can see Armentières, famous for the bloody fighting that raged around it, and more famous as the home of that celebrated lady, 'Mademoiselle of Armentières — parley vous?' There's usually a touch of humor to relieve every situation.

On the way back to Brussels, Armstrong swings our De Haviland south from Ypres to Passchendaele and on over Mount Kemmel, Aubers, Lens, and Vimy. Then at Arras, turning north, we pick up the valley of the Scheldt near Douai and get back to Sabena aerodrome in time to board the Dutch Fokker coming through from Amsterdam.

During most of the war, these Flanders skies through which we are flying were the private hunting preserve of the Royal Flying Corps. Here it was that Bishop, Ball, Mannock, McCudden, Collishaw, Barker, and thousands of other gallant youngsters from the far corners of the British Empire, wrote their names across the cloud fields of Flanders in streaks of flame.

There was young Albert Ball, an utterly daring knight of the air whose magnetic personality quickly caught the popular imagination. He was the first British Ace of Aces. Forty-three victories had been recorded to his credit when a burst from a German machine gun ended his meteoric career. Wild tales were told of his deeds. He was a fiery, ingenious, resourceful pursuit pilot, with that flash of inspiration which often saves men in tight corners. Here's a yarn about Ball that indicates what a quick-witted lad he must have been:

He was out long, and as usual far behind the German lines. Three Albatross scouts took after him. Obviously the Germans were experienced pilots. They knew all the tricks, and with the odds so heavily against him it looked as though young Ball was about due to 'go west.' The Germans kept the British ace busier than he had ever been, simply darting and maneuvering to avoid their fire. Sooner or later they were bound to get him. At any rate so it seemed.

Suddenly Ball went into a steep dive. The Albatross pilots were prepared for this common maneuver, and swooped after him. But Ball kept straight on down, picked out a level field, and landed. It looked as though he had surrendered. The Germans dropped down also — to take him prisoner. Their three planes came to earth near him. The pilots clambered out and

started over to the English plane. That was just what Ball was waiting for. He had his motor running. As soon as he saw all three pilots out of their cockpits, strolling toward him, he 'gave her the gun,' flashed across the field, and was in the air again, headed for home. He was miles away before the astonished German pilots could take off after him.

Frequently in the war in the sky some freak thing happened to save a pilot. There was another occasion when Ball was trapped behind the German lines. This time enemy squadrons caught sight of him and rushed to surround him. Directly in his line of retreat was a formation. He saw that his only chance to get away was to run straight for it and try to plunge through. If he stopped for maneuvers of any sort, he would have the whole swarm down upon him from every direction. He darted toward the nearest of four German planes. Both machines fired at each other. Ball was rushing to a headlong collision. He was desperate. He could afford to be. But the German didn't think much of the idea. He swerved. That was what Ball expected. The second and third planes did the same. Ball plunged recklessly at them, as if to warn them that they would have to get out of his way or be knocked out of it. They moved! Now for the fourth plane. Ball sped toward it. This German did not swerve. He was made of sterner stuff.

The planes rushed at each other at tremendous speed, firing as they came. The German gave way not an inch. He, too, seemed to invite a head-on smash. What was the matter with the fellow? What was mere desperate courage on the part of a trapped, fleeing pilot was obviously the next thing to insanity on the part of one of an attacking force. Ball kept on straight ahead. He was not the kind of fellow to let any man outgame him. If this German had the nerve to invite a crash, why, then Ball was not behind him in suicidal daring. He shut his eyes, still firing as he flew, and waited the impact. The crash never came. When Ball opened his eyes he saw the German plane far below, falling out of control. It had plunged just before the instant when the two machines would have met headlong.

Ball, in thinking it over afterward, surmised that the German had been shot dead as the two planes approached each other. For a few moments the controls might have been kept steady, until a final slump of the airman's body jammed them, causing the plane to dive.

Ball made good his escape, but on his return flight he had to pass through an intense bombardment. Guns were shelling trenches with a hurricane of fire. The air was alive with missiles from the batteries below. One struck his plane and went right through the center section of the fuselage without exploding. The machine was

wrecked, but held together just long enough to get home.

Ball was brought down in May, 1917. Guynemer, the French Ace of Aces, disappeared soon after. Both vanished into the blue in a mysterious manner. Various tales came through the lines, but to this day no one knows exactly how they met death.

Colonel William A. Bishop, the famous Canadian ace, was a flyer of a different type, cool and methodical. The front of Bishop's plane was painted blue. 'Blue Nose' they called it.

Bishop's most daring stunt, probably, was an attack on a German aerodrome far behind the lines. He had brought his record up to twenty, and wanted to add a few more before going on leave. These war pilots were as eager to increase their bag as baseball players are to run up their batting averages.

'I ought to be able to push my record up to twenty-four,' Bishop mused. 'Four Germans would make a fine bag for one stunt, and I think I can turn the trick.'

A little before dawn Blue Nose hopped off and started east. Bishop had picked the nearest German aerodrome as his target. It was not far behind the lines, which was an important consideration. If he attacked in the way he intended, word would instantly be telephoned from one German air station to another and a swift and overwhelm-

CANADA'S WAR COMET
Bishop, the pilot of Blue Nose

OVER THE SHATTERED RUINS OF NOYON

ing pursuit would be organized. The shorter the distance Blue Nose would have to fly back to the British lines the better it would be. The east was growing bright when he arrived above the line of hangars. A swift dive and he was just over them. Not a soul was to be seen outside.

'All asleep,' he thought, 'let's get 'em up with a bit of reveille.'

He flew close to the buildings. A peppery burst of machine-gun fire. The bullets crashed through the metal sides of the hangars. Nothing happened. Blue Nose waited, still circling around. Another rattle of the machine gun. Everything remained perfectly quiet.

'Damned bad luck,' muttered the pilot in the blue-nosed plane.

Blue Nose headed up into higher atmospheres again. Perhaps there might be early marching infantry on the ground somewhere, a fair target for an airman. Or an enemy plane or two might be out, with the prospects of a fight. Blue Nose turned east, steering farther and farther behind the German lines. No soldiers on the ground were to be seen or flying machines in the air. But as Bishop sped along he caught sight of the sheds of another aerodrome.

'Shall I, or shan't I?' thought Bishop.

He had come out looking for an aerodrome, and here was one. It was not a dead one, either, like the other. On the ground were seven of the

gaudily painted German machines. Mechanics and pilots were standing around in groups. But this aerodrome was much farther behind the German lines than the one Bishop had selected, and the dangers of a pursuit after he had made an attack were much greater. In addition he did not know exactly where he was. He was over strange country, and might have trouble in finding the nearest way back to safety.

'Let's go,' he resolved.

The sight of the seven planes down there was too tempting. He swooped down to three hundred feet, and opened fire, scattering bullets all around the machines. His downward rush carried him to within fifty feet of the ground. There was a tremendous scurrying around of the men on the ground. How much damage his fire did he could not tell, save that one man fell and others picked him up and carried him away. He circled around and watched, laughing as the men around the hangars darted hither and thither like frightened rabbits.

Then a familiar, ominous rattle. Bishop had forgotten that there would be quick-firers on the flying-grounds. Blue Nose zigzagged and twisted as it swept back and forth. Bullet holes appeared in its wings. The quick-firers were doing good shooting. The blue nose pointed one way and then the other as Bishop zigzagged the more wildly.

A brilliantly colored scout plane suddenly began to taxi down the field with a swiftly increasing speed. Blue Nose swooped after it, and was on the enemy's tail as he rose from the ground. The plane was doomed. It was impossible to miss. The machine gun crackled. The wounded plane crashed down onto the field, a wreck.

Another of the scouts was just off the ground not far away. Blue Nose turned on him before he could pick up enough speed to keep his distance. Again Bishop was on his enemy's tail and firing. The German pilot, seeing that he could not escape, turned down to land again. He was looking over his shoulder at his pursuer, when he hit a clump of trees. The plane crashed down.

Bishop turned back to the other planes.

'Rotten luck!' he exclaimed.

He had reckoned on a strong breeze, which would have compelled the planes to rise into the wind. Then, if two machines took off simultaneously, he could keep behind them both. But the breeze was now slack, and two of the scouts on the ground, wanting to avoid having the enemy behind them both, were running down the field in different directions. If he got behind one, the other would swing around and get behind him. He had planned that, if two planes were able to take off in different directions, he would head away and make good his escape. A push on the stick, and Blue Nose went climbing. But Bishop

had counted on being higher than he was. The two scouts that had got off came after him. One had climbed near enough to open fire. It was a faster plane than Blue Nose, and Bishop saw that his adversary was gaining on him.

At a thousand feet from the ground the two planes staged a spectacular aërial fight, circling around and around and firing. After two circuits Blue Nose got in a good spurt and the other machine toppled and fell to the ground. The second scout now came up, and Bishop saw other planes in the distance and guessed that they were reënforcements summoned by telephone. He could not try to run with an enemy close upon him and with the ground so near that diving maneuvers were impossible. He opened fire on the adversary scout, and again two planes spun around and shot at each other in the air near the flying-field. Bishop saw that his ammunition was running low.

'Well, here goes!' That was the only word for the desperate predicament.

He rushed savagely at his enemy as if to ram him, and used his last drum of ammunition in a wild burst of fire. The German eluded the attack with a swift maneuver and held off warily, with no desire to close again with so desperate a fellow. Blue Nose turned and winged away.

Four enemy scouts, which Bishop had seen in the distance, were straight overhead now, flying

high. He expected to see them swoop down on him at any instant. He was out of ammunition, and if they attacked him he was gone. But they continued on their way. Perhaps they were on some mission not connected with him at all, and had not seen him. He flew directly under them, in which position he was out of their view. They were going south, and he went south, keeping thus in hiding. After about a mile, he picked up courage and slipped off homeward. The scouts high above had apparently never seen him.

He was clear of hostile aircraft now, and yet he was, perhaps, in as great danger as ever. He grew dazed and had a feeling of nausea. He had had no breakfast, and the excitement of the morning had been too much for an empty stomach. He grew dizzy, and became afraid that he would lose his senses and go crashing to the ground. The return trip was a harrowing experience, and it is something of a wonder that Blue Nose finally landed safely at its home grounds.

When they looked the plane over, they found it full of bullet holes, some within two feet of the pilot's seat. Parts were so badly damaged that they had to be replaced before another flight could be attempted. Blue Nose was laid up for quite a bit of repairing.

At the close of the war, Bishop had more victories to his credit than any other living British airman. His score was seventy-two. Only

one other flier in the R.A.F., Major Edward Mannock, an Irishman, had a longer record. Mannock brought down seventy-three planes. Topping them all was the methodical Frenchman, René Fonck, who claimed one hundred and twenty-six victories.

Hill 60, Dead Man's Corner, Messines Ridge, and Poperinghe — we fly over them all. We see the 18,000 graves at Remy Siding, 9000 more at Hooge. And now we are over Poelcapelle. Here are the graves of 4000 men who were found in shell holes. On 3000 of these are the words: 'In memory of an unknown British soldier.'

The simplest way to see the battle-fields of Flanders is to take the regular daily Imperial Airways plane that flies from London to Brussels.

But as we fly this way our memories are chiefly of those knights of the air who fought in these skies. One day in midsummer of 1917, a broken plane fluttered out of the sky and crashed to earth, right here at Poelcapelle, leaving splintered wreckage and the body of a youth. That lad was the first French Ace of Aces.

CHAPTER VII

RIDERS OF THE FLAMING COFFIN

Rising to fame toward the end of 1915 and in the beginning of 1916, as the star of the famous squadron whose members were called 'Les Cigognes' (The Storks), Georges Guynemer was the first great French ace, the first to gain world fame. Before he fell here at Poelcapelle the official records credited him with fifty-three planes, and to this could be added many others shot down behind the German lines and never officially verified. He set the pace for his afterward famous comrades, Fonck and Nungesser, and, with them, was to France what Ball and Bishop were to Britain, what Boelke and von Richthoven were to Germany, and what Rickenbacker and Luke were to America.

Here we are back in Brussels, just in time to catch the noon plane of the Royal Dutch Air Line coming through, bound for Paris. The couple in front of us are probably newlyweds. Ten minutes out and she is resting her head on her escort's shoulder. Waterloo, Mons, and Charleroi flash below us, but she doesn't care a fig about battlefields. Is it sentiment or sickness? Possibly a combination of both. The sky is overcast, and

the ceiling only about a thousand feet up. We skim along directly under it. I have read somewhere that this crazyquilt below us is the most thickly populated area in the world. Town after town seems to rush by. I wonder how this region compares per square mile with the valley of the Ganges? Surely India must be more densely inhabited. There's a Farman biplane! Right up there — just ahead of our Fokker! Although it took off at Brussels ten minutes before we did, we are catching her. What a curious illusion! As we fly side by side the lumbering Farman looks as though suspended in mid-air. Now we have passed her. And now she seems actually to be going backward.

Our route to Paris takes us over more battlefields. The ground shows deep scars of war, far more evident even than in Flanders. In fact we are above the most shell-torn area we have seen. Down there, with hardly one foundation stone left upon another, are brown patches where the big guns churned whole villages into the mud. Apparently this is one stretch of No Man's Land that has not been put under plough. During the war what wild tales we heard of the adventures of raiding parties in No Man's Land! But one of the best that I can recall was the story of a brilliant American flier, Charles J. Biddle of Andalusia, Pennsylvania, a member of the historic Lafayette Flying Corps, who was forced down between the

two lines. At that time Biddle had already transferred from service with the French to the 103d Pursuit Squadron of the A.E.F. Before the Armistice came he had received many decorations, had been promoted to the rank of Major, and was in command of Pershing's 4th Pursuit Group. It was on the morning of the 15th of May, 1918, that Hobey Baker, Paul Baer, and Biddle set forth on a patrol. Somewhere over there in that same stretch of sky, near Ypres, where we were flying a little while ago, the three Americans overtook a new type, two-seater armored German observation plane. In the fight that followed Biddle got caught in the propeller 'wash' from the two-seater. In maneuvering out of it he had to dive under the German.

He started swerving from side to side to get me out from under him [said the Lafayette flier in describing it], so that the machine gunner could shoot, and I tried to stay under him, swerving as he did, and at the same time slowing down my motor to the limit, so as to let him get ahead of me enough to allow me to start shooting again. The Boche and I were at this time about twenty yards apart, and if he had only had a trapdoor in his bottom he might have brought me down by dropping a brick on my head. However, he did not need it. The Hun gave a twist which took me for an instant beyond the protection of his fuselage. It was only for a second or two, but that was sufficient for the observer, who proceeded to do the quickest and most accurate bit of shooting

that I have yet run up against. As a rule, in such a situation, you see the observer look over the side of his machine at you and then swing his gun around on its pivot and point it in your direction. While he is doing this, you have time to duck. In this case, however, I saw a black-helmeted head appear over the edge of the Hun machine and almost at the same instant he fired, as quickly as you could snap-shoot with a pistol, or with a shotgun at a quail in the bush, for instance. In trying to slow down as much as possible I had almost got into a loss of speed, so that my machine did not perhaps answer to the controls as quickly as it would otherwise have done. This, however, made no difference, for although I tried my best to swerve back under the Boche's body to get out of his line of fire, and in spite of the great quickness with which he shot, he was as accurate as he was quick, and his very first shot came smashing through the front of my machine above the motor and caught me just on top of the left knee. It felt more like a crack on the leg from a fast-pitched base-ball than anything else I know of, except that there is also a sort of penetrating feeling one gets from a bullet. How many more hit the machine I don't know and never had a chance to find out. My motor went dead at once, so that knocked out all chance of any further shots at the Boche. I dove under him out of his line of fire, and then twisted around and planed back for our own lines, trying to make the most of the little height I had. A glance at my gauges showed no pressure in the gas-tank, and that, together with the way in which the motor stopped, made it quite obvious that the trouble was a severed

pressure or main gasoline pipe. Now we carry a special little emergency tank which is operated by gravity and is for just such occasions. It will run you ten or fifteen minutes — plenty of time to find a good landing-place. I tried to turn it on, but the little stop-cock would not budge, so I dropped my controls and, letting the machine take care of itself for an instant, tried with both hands to move it. Still no effect; it had evidently also been put out of business by a bullet, probably the same which cut the main connections. It only took a few seconds to cover the distance to the ground which, after I had got turned in the right direction, could not have been more than three hundred yards. I kept working away until the last minute, trying to get the motor going, for every one who knows this country also knows that it is utterly impossible to land any machine in it without crashing, let alone a Spad, which requires at least as great speed for landing as any other type. All my efforts were useless, however, and I saw there was nothing for it but to smash up as gracefully as possible. The thing that bothered me most, however, was not the smash, for that would probably only result in a little shaking-up, but I thought I was farther in the Hun lines than I really was and had most unpleasant visions of spending the rest of the war in Germany, which is not at all my idea of a good time. If, however, it was No Man's Land where I was going down, I thought the Huns would probably turn their guns loose on my plane as soon as it crashed, and that the best thing to do would be to get out and away from it as quickly as possible. I held my machine off the ground as long

as I could with the double purpose of getting as far toward our own lines as possible, and also so as to reduce my speed to a minimum before I touched the ground and the crash came. I braced myself inside my cockpit and tucked in my head like a blooming turtle in his shell. Just at the last moment I veered the machine a little to one side to avoid landing in the middle of a barbed-wire entanglement, and then the instant my wheels touched the ground, over my machine went on the middle of its back with a loud crash. As soon as it was over, I unbuckled my belt and scrambled out, and lost no time in rolling into a near-by shell-hole. I looked around rather expecting to see a bunch of Huns running up to grab me, but there was not a living soul in sight and the place seemed remarkably quiet. Fifty yards away was a German advanced post, but luckily for me it was not occupied that day. It turned out afterwards that I had come down in No Man's Land about one hundred yards from the Hun front lines and three hundred from the English. Twenty yards to one side was an old artillery observation post made of sandbags, which looked as though it might make a fairly secure hiding-place, so I decided to get there while the going was good, for I felt sure that it could not be long before things started to happen. I crawled toward this shelter as fast as I could go, trying always to keep out of sight in the shell-holes, rolling over the edges of the craters and half swimming, half wading, through the water and muck with which they are filled. On the way I passed a dilapidated lot of barbed wire. I suppose I reached the shelter in less than a minute after hitting the ground and just

as I got there machine guns seemed to open up all around. The Hun whom I had so unsuccessfully tried to bring down was flying overhead and I think shooting at the wreck of my machine, although I did not look to be sure. Then the Boche gunners in the trenches turned loose with a machine gun or two on my plane and the English infantry began firing at the Hun plane to drive him off. The English also seemed to be firing at me, and I learned later that this was true, for they at first mistook me for a Hun. Altogether, there was quite a rumpus, so I just lay low in my shelter, and as the bullets went singing by was mighty glad I had a shelter to lie low in. The Boche plane was still flying around, and I did not dare come out until he had gone, for he would have seen me and potted me like a rat. While I waited I tore open my pants and had a look at my knee. It did not seem to amount to much — two or three holes as big as the end of your little finger and about a dozen little ones. It looked as though I had stopped a load of bird-shot more than anything else. It bled very little, but I tied it up with my handkerchief anyhow to keep the mud and water out. In less than five minutes after I had come down I heard the sound which I had been expecting and dreading — the whine of a Boche shell coming. The first one landed about a hundred yards over my plane, but the line seemed to be perfect. I waited to see where the next one would go, and the next five or six all landed in about the same place, perhaps seventy-five yards in front of me, but rather effectively cutting me off from the English trenches. They were all big ones (5.9 inch caliber) and came at perhaps thirty-

second intervals to start with; later they speeded up a bit, and sent sometimes three or four over at the same time. They used high explosives, luckily for me, instead of shrapnel, but the H.E. makes a terrific commotion when it goes off and throws a column of mud and débris nearly a hundred yards in the air; seems to have rather more bark than bite, however.

Pretty soon they began to come closer, and though I hated to leave my cozy shelter I decided to get moving again, for if one of those boys had landed in my immediate vicinity, there is no doubt at all but that my shelter and I would have gone for a ride. It seemed just a question of time until this happened, so I took to crawling and swimming in the shell-holes again. Stopped for a minute to rest in another little shelter and a couple of 5.9 shells went off just behind it, rocking it from side to side and throwing dirt all around me, which made crawling seem a very slow method of getting away, so decided to try running. Before my leg stiffened up, it did not hurt much; but even so, with these big shells coming that close I think I could have given a pretty good imitation of running without any legs at all. While in the first shelter I had taken a good look at the sun and at the German and English lines of 'sausage' balloons, so that I was fairly sure of my direction. Hence, I waited until a shell had just burst and then got up and made a dash for it along the edge of a little old narrow-gauge railway, where the going was smoother. Had not gone far when a sniper's bullet cracked into a rail alongside of me and I heard the whiz of some more big shells coming. Down goes little Willie flat on his face in the ditch; and boom, boom, boom went

three of them just to one side. After this they seemed to change their range again and began putting them back where the first ones had fallen, and as I had by this time reached this spot they came much too close for comfort. I suppose when they saw me running they thought they would make sure of me. There was nothing for it but to get on as fast as possible, for crawling won't help you if one of these big fellows decides he wants to share your shell-hole. I kept on running and crawling as opportunity offered, and each time I heard a shell coming I dove head first into the nearest shell-hole. As they are all full of water I made a great splash each time. You can't imagine how the sound of a big one coming close makes you want to hug the mud in the bottom of any old hole that comes along. I guess I had the 'wind up' all right; but then I am not used to this kind of war, and I hope I shall never have to be. I struck two more lines of barbed-wire entanglements which were in good condition and very thick. I was afraid to stand up in full view of the Huns and try to climb over them, which would probably have only resulted in my getting completely tangled up, especially as I still had on my heavy fur-lined flying combination. Therefore, in both cases I went under, rolling in each case into a big shell-hole, submerging up to my chin and swimming under, pushing the wire up with my hands as I went. Funny, what one will think of in such a situation, but I had to laugh at myself as I remembered Bairnsfather's comic drawings, 'The Better 'Ole' and 'When do they feed the Walrus?' If you don't remember them, look them up in the collection of Bairnsfather's drawings that I sent you

by X—— and you will see what I mean. I don't think I ever really appreciated all there is in those drawings until then. Finally I sat down in a shell-hole to take off my combination, for being soaking wet it weighed a ton and had me so 'all in' I felt as though I could lug it no farther. Just then I looked up and have never been so delighted in my life as when I saw half a dozen Tommies beckoning to me over a low parapet about fifty yards away. I was pretty well fed up with crawling and swimming by this time, so decided to cover that last fifty yards quickly — bullets or no bullets. Forgot all about how tired I was and made a run for it, and it is too bad some one did not have a stop-watch to take the time, for I think it was about two seconds flat. I fairly threw myself into that trench, and the first question asked was, 'Sure and who are you?' They were much surprised to find an American. Some one yelled over from another trench near by to know if they had captured a Boche, and one of the Tommies said, 'Ay say, Maitie, when you furst come down we was after thinkin' you was a bloody 'Un.'

In the official history of the Lafayette Flying Corps, edited by two of its members, Captain James Norman Hall and Lieutenant Charles B. Nordhoff, the private letters of the members of this historic volunteer *escadrille* are published. I have read scores of books that came out of the World War and to my mind the most thrilling and absorbing of them all is the second volume of 'The Lafayette Flying Corps.' [1]

[1] *The Lafayette Flying Corps*, James Norman Hall and Charles B. Nordhoff. Houghton Mifflin Company.

This particular pursuit pilot's adventures were not over when he tumbled into the trench full of Tommies. What he had reached was an 'advanced post.' The duck-boards leading up to it from the front line itself were in plain view of the enemy. Hence the isolated post could only be relieved at night. The wounded flier was obliged to spend the entire day there under shell-fire and his description of the life of the Tommies at that spot in No Man's Land is as fascinating as the rest of his tale. Aërial battles overhead, the ping of snipers' bullets, and the wit of the Irish riflemen from Ulster prevented the day from getting monotonous.

Under us now are a lot of old gun emplacements, and light railway tracks, a few huge craters probably caused by mines, and here and there a deserted pill box — and there goes a shepherd with a flock of sheep. Now we are over a large field with a concrete circle. In the center, in large letters are the words: 'Saint Quentin.' So we are passing over the battle-field of the Somme, through the skies where Guynemer, Fonck, and Nungesser fought most of their battles.

Guynemer was a mere lad of twenty-one when he was killed, slender, frail, and of an almost girlish gentleness. He was of a fine old French family, and had been reared in sheltered, cultured surroundings. So young and frail and seemingly

unfit for war was he that the aviation officers rejected him when he offered himself for enlistment. Nor did his persistent entreaties avail him. He was compelled at last to join up as a laborer around the flying-field, to do odd jobs and run errands. By a process of pestering and bothering the pilots he induced them to take him on flights and teach him how to handle a plane. The natural air sense that he displayed and his cool daring finally got him a commission as a pilot in the squadron of Cigognes. He had the Gallic flair for daring and a thirst for glory. There was a theatrical glamor about him, and he delighted in the *tour de force*, the feat of virtuososhiip, as a musician may delight in some particularly difficult and flaming piece of technical display. The feat that gave him perhaps his greatest elation was that of bringing down a German plane without firing a shot, which, on the face of it, is a startling performance.

The jamming of machine guns was a common occurrence, particularly in the earlier days of air fighting. In a brush with a German two-seater at twelve thousand feet, Guynemer's weapon jammed before a dozen shots had been fired just as he was in a good position to let go and bring down his man. The machine gun was out of it, so far as that particular fight was concerned. The sensible thing, of course, was to go straight home. You would say, offhand, that any one but a mad-

man would have done just that. But the Cigogne was in a sportive mood that day, and indulged himself in a trifle of dangerous amusement. He continued the fight. With a set of brilliant maneuvers he swerved and darted so as to keep himself constantly in a strategic position, in that position which the air fighter in those days usually tried to get — behind and a little below. With that advantage he would be safe from the forward fire of the hostile pilot, and the tail of the enemy machine would shield him from the bullets of an observer firing from the rear.

The two machines twisted up and down, right and left. The machine gun on the German plane rattled at every opportunity, but Guynemer had the greater skill. He was constantly in a position where, if he had been able to fire, he could have downed his man. The tell-tale silence of his machine gun was kept from the Germans by the roar of their own motors. To Guynemer it was mere practice in aërial tactics. The German pilot believed he would be shot down at any moment. He tried to run. Guynemer kept after him. The German dived. Guynemer dived after him, and again got into favorable position. In desperation the German kept darting lower and lower, with the implacable enemy on his tail. He was near the ground now, and in bad position for further maneuvering. He landed. It was behind the French lines. The German had surrendered, and

surrender in aërial fights was not easily accomplished. He set his machine afire, and was taken prisoner when Guynemer came to earth.

The fighting in the air had a quality of daring more vivid, more breath-taking than almost any you will find in the other fields where human courage displays itself. The mud of the trenches, the stony wastes of the fighting lines high in the mountains, the bold movement and skirmish in the Eastern desert brought out exploits as great in raw nerve and fortitude as any ever seen in the upper atmosphere. But there was something in the dizzy height, the deadly plunge into space, and the plain simplicity of plane against plane, of aërial squadron against aërial squadron, that was unique. Every quality of action seemed to be more dramatic in the air.

Take the instance of the two young Frenchmen, Lieutenant Floch and Sergeant Rhode who were downed by a Fokker, and succeeded in taking their last revenge. An incendiary bullet set their plane afire. With cremation in front of him, the pilot used the last flying moments of his plane for a whirlwind dash into his enemy. A crash in the air. A whirring propeller locked itself. Wings crumpled. The two planes were caught in a deadly embrace of fire, and swirled to the earth in one streak of flame.

One day Guynemer fought a thrilling battle with an English machine. Yes, just that, incredi-

ble though it may seem. They sighted each other in mid-air, and immediately the Britisher opened fire. The Cigogne twisted and dodged, trying to elude the bullets and at the same time make his French markings more clear. Nothing availed. The Briton continued his attack with persistent valor.

Finally Guynemer perceived that he would have to fight. Escape from his combative ally was impossible, except with an excellent chance of being shot down. So he opened up, shooting at the motor of the other plane It is doubtful whether he ever fought more skillfully in his life. His bullets crashed around the motor. Then the motor stopped. The plane began to sink. It went down under control, and landed safely. Fortunately the fight had been staged inside of the Allied lines. The Cigogne followed his last conquest to earth. The English pilot had been shot through one leg. The wound was painful. He experienced another and still greater ache, however, when he learned the identity of the plane he had so valiantly assailed. He was a new pilot, who that day had shot down his first German. That maiden victory had so elated him that he was out to tackle anything in sight.

Guynemer was shot down eight times, and seven times returned safely. Miracles seemed to intervene in his favor, until the last time.

Once a stream of machine-gun bullets crashed

into his radiator. The engine stopped and he dropped out of the fight. He was back of the enemy lines, gliding over the trenches only a few hundred feet from the ground. Anti-aircraft guns showered him with bursting shrapnel and tore gaping holes in his wings. At fifty feet he passed over the German soldiers in the front lines. They opened a furious rifle and machine-gun fire as his little ship hurtled toward No Man's Land. In the opposite trenches the poilus watched the derelict Cigogne. It was coming down within easy rifle fire of the Germans. But the poilus, rather than see the helpless pilot shot down in front of their eyes, clambered over the parapet and charged the German trenches.

The skirmish diverted attention from Guynemer, who crashed in a shell hole. His plane crumpled and he was thrown out, but the poilus carried him to safety.

One morning, while diving on an L.V.G. a machine-gun bullet came through his engine, oil reservoir, cartridge box, and struck between his fingers with just enough force to jar his hand. It threw his aim off, and left him open to the hostile fire. A bullet crashed into the edge of his seat. Others smashed his propeller. He was forced to land a few feet behind the French trenches, and then got his 'dessert,' as he called it, when the German artillery reduced his scout to splinters.

In a glorious fight above the Somme, Guy-

nemer brought down two planes and was after a third, when a shell from his own Archies struck his plane in full flight at an altitude of ten thousand feet. It hit his left wing and smashed part of it. The machine dropped in a tight spin. But by shifting his body Guynemer was lucky enough to pull it into a glide. When it hit the ground the nose sunk deep in the soil. When the poilus ran up they found Guynemer examining the wreck. How he had escaped was some inexplicable miracle because his little Nieuport was washed out.

On September 11, 1917, two planes set out from the French lines. In one was Second Lieutenant Verduraz, in the other Guynemer. The machines proceeded together on patrol, and then Guynemer went after a German two-seater. Verduraz saw the beginning of the fight. Guynemer appeared to have all the best of it. The German pilot maneuvered in a way which indicated that he was inexperienced. An enemy circus appeared in the distance. Sure of his comrade's victory, Verduraz flew to head off the formation and prevent it from breaking in on Guynemer's fight. After a brush with the enemy planes, he returned to the aerodrome, expecting to find Guynemer there.

Guynemer did not return. Some time later word came that he had been shot down and had fallen near the cemetery here at Poelcapelle. He

had a bullet in his head. His conqueror was an unknown young German, Lieutenant Weissmann by name, who wrote to his parents:

'Have no further fears for me. I have brought down Guynemer, and I can never again meet so dangerous an adversary.'

A few weeks later Weissmann, flying a Rumpler, had an encounter with Fonck, who was soon to become one of the great French aces. They fought at fifteen thousand feet. After a short exchange of fire Weissmann dropped out of the fight. A bullet had drilled his brain. His plane fell to earth and lay splintered not far from the place where he had shot down the knightly Guynemer.

Mystery shrouded Guynemer's end. The Germans made it a custom to drop into the Allied lines lists of the aviators who had fallen behind their trenches. Guynemer's name never appeared in any of these. Later on, however, accounts of how he had been shot down appeared in German newspapers, telling of how he had been accorded a military funeral. But the French, anxious to honor the grave of their first great ace, could never find Guynemer's grave. From the Germans now came word that they had not buried him, that the fire had been too hot at the place where he fell, and that British shells had blown pilot and plane to atoms. Something strange must have happened to give rise to such conflicting reports.

The mystery has never been solved. The French peasants say he flew straight to Heaven, as did Elijah.

But there was one famous French ace, peer of them all, who at the end of the war made the startling statement: 'I have never been in a tight fix!' That airman was Captain René Fonck, and he gloried in the fact that he had never even been wounded. Moreover, he declared that no bullet had ever come near him, nor even punctured the wings of his Spad.

One fair day in May, Fonck brought down six planes, a feat equaled but once during the War by an Englishman, a Captain J. L. Trollope who was captured after running his record up to eighteen. Early one morning, at twenty thousand feet above Montdidier, Fonck encountered a German formation. In ten seconds he had shot down two of the enemy craft, and then, after three or four minutes of maneuvering, a burst of fire from his machine gun sent a third spinning in flames. In the afternoon, after luncheon, he went up again. An artillery observation plane was his fourth victim. Still not satisfied, he flung himself at four single-seater Pfalz scouts that were convoying a couple of Albatross two-seaters. He dived on the rearmost plane and polished it off with one burst. Swiftly evading the attack of the other three he whirled up under the tail of one of them, and shot it down while the others raced for home.

Fonck, always cool and rational, apparently never made an impetuous move. His comrades Guynemer and Nungesser were of the sort to dive in on anything and shoot it out. Not so René Fonck. What is usually called the Gallic temperament seemed to be in him not at all. He had dash and nerve, but with it was an unusual strain of subtlety and uncanny cunning. He depended on his unrivaled skill at maneuvering and gunnery to bring him victory. If he attacked groups of enemy planes single-handed, it was out of no foolhardy heroism.

'The Germans fly in formations that are too large,' he said. 'Once you dive in the middle of them they are at a loss. They get in their own way. Before they can scurry around and dispose themselves for an attack you have an excellent chance of maneuvering quickly and catching one of them.'

He was not a joy rider. He did not go winging around for the sheer fun of flying. He took his Spad out for the immediate purpose of bringing down enemy planes and stayed in the air only long enough to achieve that object.

'Flying at high altitudes is wearing on the organism,' he said. 'It plays a man out, weakens him, frays his nerve. A man should be in training for air fighting, just as he should be for any other kind of athletic sport.'

So he trained, and kept himself up to concert

pitch. He exercised to keep his muscles supple and his mind clear. He never even touched wine. Nor would he take his plane up unless he felt in perfect trim.

Fonck is still alive.

To fly through these same skies gives one a more vivid idea of what those heroic aërial duels were like. We can almost imagine our own plane in a stream of machine-gun bullets with 'Archie' shells bursting all around and that gas tank out there in front waiting for the ping of an incendiary bullet — an exploding blaze and afterwards a flaming coffin.

Then we think again and we recall what strides have been made in the past ten years since Guynemer and Fonck flashed through these skies. We probably are safer up here than we should be aboard a continental train, judging from the number of railway accidents lately. And military planes are constructed now so that a pilot can drop his fuel tanks in case of fire and if his plane is hopelessly shot up he can depend on his parachute and float gently to safety.

The Somme down there flows like a long 'S' past Saint-Quentin, past Péronne, past Amiens, in a general westerly direction. Just east of Amiens another long stream flows into it from the northeast, the Ancre. The two rivers make an angle facing east. A fifteen-mile line of trenches cuts the two rivers, making the third

side of a triangle. This was the scene of the British advance in the summer of 1916. It was called the battle of the Somme.

This land of Picardy below us is a pleasant country to look upon, with rolling hills and innumerable little streams that flow into the two main rivers. Even from the air it has a look of sylvan tranquillity and happiness. Yet it is an old and bloody cockpit of war. It was the seat of government of Clovis and Charlemagne, the stronghold of their power, and since that time its people have always shown a warlike temper. The Crusades may be said to have had their origin in Picardy. The fiery monk, Peter the Hermit, who inspired the Crusades, was a native of the land over which our plane is speeding. Much of the Hundred Years' War was fought down there. Shakespeare called it 'the tawny ground,' which his hero, Henry V, reddened with blood. As we look down we seem to see the knights and men-at-arms of Louis XI and Charles the Bold waging their bloody strife. We see Spaniards and Germans, and then the Cossacks of Czar Alexander I, driving hard against the broken army of Napoleon. But not in any of those centuries of bloodshed was any terror of war let loose to match the scene between the two rivers during the summer of 1916, particularly in that bloody day when the tanks made their first appearance like huge fire-breathing monsters out of another world.

A long period of terrific fire and the German trenches were blotted out by a hurricane of shells, and on the first of July the British went over the top on a twenty-five-mile front. The Germans were well prepared, but they had expected the attack north of that town of Albert back there. Part of the attack did strike north of Albert, and there it failed with frightful loss of life. Farther south the Germans were taken by surprise, and the British broke through. They captured an amount of territory that sounds ridiculous now. It was a good deal in those days of deadlock on the Western Front. The first wave spent, another was launched, and another gain was made. And so it went, week after week. The British onset continued all through the summer and well into fall.

It was two and one half months old when one morning the Germans saw creeping toward them a line of fantastic-looking monsters. From our post in the sky we can imagine the lumbering, relentless charge of big, roaring caterpillars, climbing through trenches, crushing down barbed wire, spitting fire right and left while bullets glance off their armored sides. Some go on. Some station themselves in advantageous positions and enfilade German trenches. Now one is stuck and out of the action, but in the main the tanks carry on. Thirty-two go into the fight. Fourteen are disabled. The tanks enable the British to make a large gain that day.

The critical point came toward the end of September when the German strength was strained to the breaking-point and the British were ready for a final drive. It seemed as if the battle of the Somme were at the point of turning into a major victory for the Allies. It seemed as if the British might break through and roll up the German front. But in the critical moment autumn weather came at its worst. The land was flooded. Motor transport broke down in the oceans of mud. The attack continued, under appalling difficulties, on past the middle of November. Then winter descended in earnest, and the line was deadlocked once more.

Two years later, in the spring of 1918, these lands of Picardy along the Somme saw another wild flame of war. It was here that the culminating Teuton stroke, the one that was to win the War, fell upon the British lines. To a spectator stationed high in these clouds, what a sight it would have been! The whole weight of Germany struck out with new methods, new tactics, a short burst of artillery fire and the famous 'infiltration.' There was no grand 'over the top' surge forward, but an almost unnoticed penetration of the hostile line by small detached parties of especially trained troops who were armed elaborately with the most recent devices known to the art of war — machine guns, bombs, flame-throwers. The British line melted away. In a few days the

Germans won back all the ground that the British had taken during the long battle of the Somme, during the whole three previous years of fighting. In two weeks Ludendorff drove Haig's army back thirty miles. It seemed as though the British would be rolled right into the sea. In front of Amiens, far off there in the sunshine, the thin, worn line held. The Germans struck vainly for Amiens, and then swiftly turned their forces for drives at other Allied sectors, and for that final thrust toward Paris, the one that the Americans helped to block.

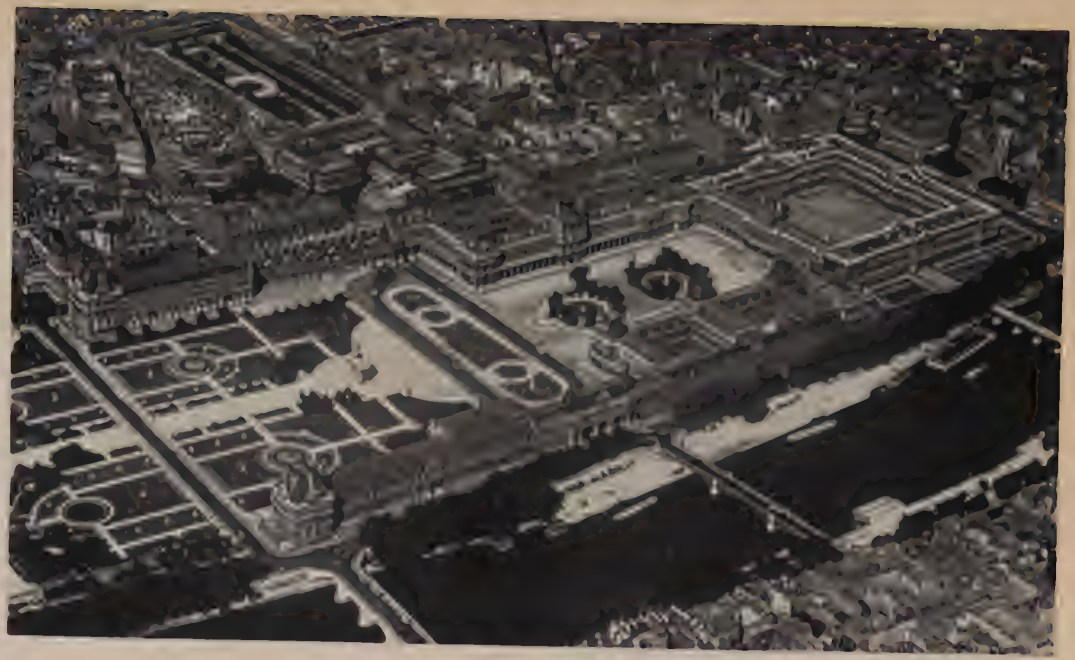
On our left is Ham, the little that is left of it. The French used to bring correspondents and visiting congressmen up here to show them what a real shell-torn city looked like. Yonder is another fair-sized city, most of it destroyed, evidently Noyon, because that battered cathedral looks familiar. Off there is a big château on a hill, damaged too, with all its outbuildings in ruins.

But the marks of war gradually disappear, and as we approach Le Bourget, the great airport on the outskirts of Paris, the country is fresh and smiling.

This great French junction of the air is an even more impressive sight than either Croydon or Amsterdam when you circle above it. A gray haze hides both Eiffel Tower and the minarets of Sacré Cœur, so we can look down at Le Bourget

with both eyes. We count forty-five planes lined up there in front of the hangars. But this is a military as well as a civil airport and nearly all of the forty-five are pursuit planes.

Sliding down the long gravity road leading from our aërial boulevard to the Paris harbor for those who go into the air in ships we taxi up to a great concrete platform, step out, pass through the usual customs and passport formalities, and a few minutes later are in the second-floor café which overlooks the flying-field. Ascending another flight of stairs we sit on the terraced roof for a few minutes watching the incoming and outgoing ships of the sky. Just next door are the administration buildings in which are the offices of all the air lines that use this cross-roads of the skies. These include the French, the British, the Dutch, the Belgian, and the German. The Danes, the Swedes, and the Swiss also have their representatives at Le Bourget, although their planes do not come this far. Next door, also, is the Paul-Bert Pavilion where all pilots are obliged to undergo a medical examination every six months. Auto-buses crowded with passengers come out from the center of Paris every little while and it is easy to see that air travel is becoming popular. This is partly due to the fact that flying is the fastest means of transport and partly due to the cost. Although the prices are constantly changing, the cost by plane is usually only a



THE LOUVRE

In a few seconds from the sky you can get a more vivid picture of the cities and structures of men than in days afoot on the earth

PLACE DE LA CONCORDE

From Paris we set out on our long flight all the way across Europe to the Golden Horn

trifle more than first-class railway fare — sometimes even less.

These mammoth concrete sheds on either side of us are the hangars where all the planes are berthed. They have huge automatic doors that are operated by electricity. They are heated and lighted in the most up-to-date way and behind them are the repair shops where the mechanics work.

Everything we see around us here at Le Bourget increases our confidence and increases our eagerness to be off on our next jump which is to take us all the way across Europe, in seven-league boots, from Paris to the Golden Horn.

CHAPTER VIII

UP THE MARNE TO SAINT-MIHIEL
AN ARIZONA PLAYBOY OF THE SKIES

Now and then I find some one who tells me that he finds flying monotonous. Whenever a man says this to me I look at him in amazement. It's true that we all see things from a different slant. It's true also that if you fly high enough the hills seem to flatten out, the fields become mere rectangular figures on a checker-board, the roads grow threadlike, and great rivers are transformed into insignificant rivulets. But somehow I have never found flying monotonous — not for a single moment. Perhaps there is an explanation for this, for as I speed across the sky the whole history of the region below me, or such fragments as I can recall, come rushing to mind. So I really see a double panorama— one with my eyes, the other with my imagination.

As I look back on it, there was not a flight in Europe that was monotonous. Indeed we pass so swiftly from country to country, and to regions so totally different from those passed a few minutes before, that I can imagine no continent where flying could be as far from monotonous as the Continent of Europe. For instance,

just think of the bewildering variety spread out below the nose of your ship on an aërial journey right across the heart of Europe from Paris to Constantinople.

This is to be our next sky jaunt and we are to make it in six stages, across seven countries, from the Bay of Biscay to the Black Sea.

The regular route followed by the French planes of the Compagnie Internationale de Navigation Aérienne includes stops at Strasbourg, Prague, Vienna, Budapest, Belgrade, and Bucharest, before swooping down near the Golden Horn. But we are to fly it by a slightly different route.

If you happen to be interested in history, either ancient or modern, few flights will appeal to you more than this first stretch between Paris and the minarets of Stamboul. We are to fly right up the valley of the Marne, then across the Champagne and the Vosges to the Rhine. It seems only the other day that a million American doughboys lived and trained and fought in the fields and villages and cities beneath this aërial highway.

The lumbering omnibus of the Compagnie Internationale picks us up just off the Place de l'Opéra at nine in the morning. An hour later we climb into a trim Blériot-Spad, so small in comparison with all the other planes in which we have flown that it looks like a pursuit ship.

This glistening little biplane is indeed nothing more than a glorified combat plane. So clean and delicate are its lines that it looks like a racer. The cockpit for the crew is behind the passenger cabin. In it are seats for two, but usually a lone pilot makes the trip, and the mechanic's seat out there in the cockpit is available for an additional passenger.

The aerodrome attendants usher us up the tiny stepladder into the smallest cabin we have ever seen. It is in the middle of the fuselage and its front wall is a metal partition between us and our thundering 370 H.P. Lorraine motor. The ceiling is so low that we must stoop away down in getting to our seats. They are just large enough to hold us, made of wicker, and so close to the floor that we stretch out as we should in a long chair.

At a wave of the pilot's hand the chocks are jerked from under the wheels and we shoot across the aerodrome, mounting into the air almost in the twinkling of an eye. Our Spad climbs swiftly, just like a pursuit ship off for a patrol. We circle once over the hangars at Le Bourget, catch a fleeting glimpse of the Eiffel Tower, the spirit-like white dome and minarets of Sacré Cœur, and a moment later Paris is a mere blur far behind us.

As we catch our first glimpse of the Marne off to the right, memories of war days come rushing

back. Fifteen minutes out from Le Bourget we are looking down on Meaux as we cross the Marne at an altitude of two thousand feet — Meaux, so well known to the readers of 'The Three Musketeers.' It seems almost incredible that the Germans ever got so near Paris. What a close shave that was for the French in September, 1914! After forcing their way through the Belgian, French, and British armies the Kaiser's green-gray columns entered Meaux. Then came von Kluck's famous swing to the east of Paris and that epic struggle along this historic stream. Here on these same fields Joffre and the troops rushed from Paris in a fleet of taxicabs, counter-attacked, hurled the Germans back and forced them to dig in along the Aisne. Not one single sign of the First Battle of the Marne remains. Benign Nature has erased every scar.

Fifteen minutes more and off to our left are the bluffs above the Marne at Château-Thierry. Three years have gone by. Once more the Germans are headed toward Paris. They have crushed the British and French to the north and von Hindenburg and Ludendorff are hurling their shock troops toward the gates of Paris. Once again, as in the First Battle of the Marne, the French are engaged in a desperate effort to counter-attack and save the city. This time a new factor has entered the conflict — fresh divisions have come from the New World. The

spear-head of the German advance is here below us at Château-Thierry. That spear-head must be driven back. The French troops are worn out from the fierce fighting of those heart-breaking days when Ludendorff's legions seemed irresistible. The American soldiers are still in their training camps, straining to learn in a few weeks the lessons of modern war that have been taught to their allies in three years. But despite their lack of experience they must be used. Château-Thierry is their baptism of fire. Here on these fields below us and over there in Belleau Wood was fought the first battle in which American soldiers ever played a part in a European struggle. No further doubt exists of their metal, for they succeed and for the second time Paris is saved.

Here and there we see grass-grown gun emplacements and a few old craters full of water. The hillsides are covered with vineyards, for this is the far-famed Champagne, more celebrated than any other region in all the world for its sparkling wines. But our Spad is racing through the skies at nearly a hundred miles an hour. We have passed over Mont Mirail and that column with its glittering golden eagle erected to the memory of Napoleon. Peasants crowd the main square, so it must be market day. We catch a glimpse of Epernay, and at eleven-thirty cross the Marne near Châlons. All

this region is steeped in history. It saw the legions of Cæsar, the brawny Visigoth barbarians, the wild horsemen of Attila, the English knights of the Hundred Years' War, the invading Russians, Prussians, and English of Napoleon's time, Bismarck's Prussian host of 1870, and many more armies than we can recall. One of the world's greatest battles was fought right down there at Châlons when Aëtius, the last of the Romans, with his legions and his Visigoth allies vanquished Attila the Hun. Off there to the left, on those dim bluffs along the Aisne, Blücher and his Prussians fortified themselves against the swift attacks of Napoleon in the days when Bonaparte made his last desperate effort to save himself after the retreat from Moscow, and there the Germans also, when turned back by Joffre at the First Battle of the Marne, entrenched themselves and inaugurated the new type of trench warfare.

But what of those knights of the air who went streaking through these same skies ten years ago? 'Twas toward the end of July, 1918, that the Twenty-Seventh Aero Squadron stationed near Château-Thierry received a batch of pilots from the American flying-school at Issoudun. Among them was a lad of twenty from Phœnix, Arizona, just out of high school. He was slender, aquiline of face, and blond. By temperament he was highstrung and talked incessantly of flying,

as rookies sometimes do. Another pilot in this same batch was a stolid, phlegmatic chap from Everett, Massachusetts, by the name of Fritz Wehrner. He was totally unlike the volatile Frank Luke, but from Issoudun days they had been inseparable pals. It was not to be expected that any batch of green pilots would be long at the front without receiving plenty of sound advice. This new aërial squad from Issoudun was promptly favored with a straight-from-the-shoulder speech in the office of the squadron commander. Lads coming up from the flying-schools too often had wild ideas of winging their way through skies above No Man's Land like solitary knights of adventure. But the day of that sort of thing was past. It simply wasn't done any more. That form of aërial combat dated back to the primitive days of air fighting, the days of old, the days of 1915. Formation flying was now the only way. Individual daring was not to be scoffed at, but in this new sky warfare it had to be subordinated to the disciplined team-work and maneuvers of groups of planes flying and fighting in formation. Indeed, these were sound words of advice from the lips of the squadron commander, but there was at least one head into which they did not sink.

Lieutenant Frank Luke, Jr., paid no heed. Day after day when a patrol went out he would fly along for a time, then drop off and go winging

through the clouds on his own sweet way. The other more experienced pilots bawled him out about it. What right had a young cub like Luke to do this sort of thing? It jeopardized the success and safety of the others. Still Luke went his own way, caring not a fig for discipline. The others read their own meaning into his mysterious solitary flying. They said he was yellow and wanted to dodge the fights that the other members of the patrol fought. His pal, Fritz Wehrner, talked to him about it.

'Look here, Frank,' he would say, 'you're too rash. A formation of Fokkers will pop down upon you one of these bright afternoons and there will be nothing left of you but a pile of cinders.'

Luke merely grinned. His enthusiasm for flying seemed to grow. If he had a yellow streak, his must be a strange case. But his fellows shook their heads and remarked that those who talked most usually did the least. Even while in the vicinity of the aerodrome Luke cavorted like some playboy of the skies. He would come back of an evening, diving, looping, side-slipping, and cutting every caper in his repertoire. Then, too, he was always starting away in his plane when he might have been lounging around in the hangar. Half the time Wehrner would take off and trail him. Whenever Luke's own ship was not tuned up and on the line, he would borrow

some other pilot's bus, a thing no pursuit flier appreciates. This little habit of Luke's added nothing to his popularity.

It was the 16th of August. Luke had been with the Twenty-Seventh Squadron for several weeks now. The commander sent him out with a patrol and as usual he decamped when they got a few miles away from the aerodrome. A few hours later he came winging in alone, hopped over the edge of his cockpit, and laughingly remarked:

'Well, I got one at last.'

The others looked at him, perhaps with feelings of mingled pity and scorn. Then Luke went on to relate that he had come by the idea that if he flew far enough behind the enemy lines he sooner or later would be sure to catch a German formation by surprise, pick off the rearmost plane, and in the confusion get away. Accordingly, on this day after leaving his formation he had climbed right up to his ship's ceiling and headed far into Germany. Many miles behind the enemy lines he spied a Fokker formation sailing serenely along at about twelve thousand feet, nearly a mile below him. Pushing his stick down he went into a steep dive and dropped right on the rearmost plane before the Germans saw him. One long burst from his machine gun and his victim fell out of control and spun toward the earth. The others of the formation were taken so thoroughly

unawares that, before they could turn on him, Luke, continuing his steep dive, was within a few hundred feet of the ground and speeding toward home with throttle wide open. He zigzagged back at a low altitude, dodging a storm of anti-aircraft fire and a hail of machine-gun bullets from the trenches below. Where he downed the plane he hadn't the faintest idea, except that it was far behind the German lines. The victory, of course, could not be verified. The other pilots, all except Wehrner, listened to the tale with skepticism.

For a whole month after this Luke went on flying, in season and out, leaving his formation on every occasion and increasing his reputation as one of those useless fellows who, temperamentally incapable of adhering to discipline, are perpetually spoiling things for others. They still thought he was yellow.

As our Spad races on toward the east we enter the skies where Luke made his reputation and became the American Ace of Aces, the most spectacular pilot to wear silver wings on an American tunic during the World War.

At eleven-forty-five we pass Bar-le-Duc. The last time I was there, in August, 1917, the city was half in ruins. Whole sides of buildings had been shattered down by shells from German guns and bombs dropped by Gothas. Every night, as regular as the clock, squadrons of Ger-

man bombing-planes came over. All lights were out. The shriek of sirens added to the terror. The people huddled in their cellars. Then came the roar of exploding bombs and of more walls crashing into the streets.

It used to take us nearly an hour to drive in a rumbling French camion or American Dodge from Bar-le-Duc to Commercy. At least a score of times I made that journey, and to-day in our Spad it takes us scarcely ten minutes. Commercy was a great gathering-place for American soldiers and officers. Down there somewhere is a little hotel where in our broken French we used to tell the laughing mesdemoiselles to bring us *un omelette du pain et beurre, avec café au lait.* We could at least order that much even if the rest of the French menu was beyond us.

From here on for the next half-hour the country is even more familiar. Just off to the left now, there in plain view, is another little French city whose name will be linked with the story of American feats of arms as long as this country exists. It is Saint-Mihiel, and all that region around it is where General Pershing's forces fought as a separate American army for the first time in France. Here it was that he squeezed the Germans out of another salient. We had entered Saint-Mihiel with the troops during that battle, and for three nights we slept

in a château on the outskirts with an organization of American engineers. Most of the city was in ruins and its inhabitants had fled.

On the east of Saint-Mihiel are the little villages where the doughboys arrived just a few minutes after the enemy made an unceremonious get-away. The German artillery had sent over gas shells and we all wore our masks. Several Salvation Army lassies were frying doughnuts in the narrow main street of Apremont. In the bright sky overhead came the rat-a-tat-tat of machine guns. Looking up we saw an American pursuit plane in deadly combat with a two-seater observation plane over Thiaucourt. A moment later the German burst into flames, the plane turned over and came spinning down leaving a long trail of black smoke in the sky. A thousand feet from the earth the observer jumped and we saw them disappear in a wood just a short distance away. An hour later we found the wreck. The flames had burned away everything except the metal skeleton of the fuselage, and strapped in the front cockpit were the charred remains of the pilot. The fire was still burning and too hot for us to approach closer than within a few yards.

It was during that same Saint-Mihiel offensive that Luke's fellow pilots discovered what kind of fighting man this Arizona lad really was. On the extreme right of the American sector

were two German observation balloons that had been causing great damage by directing an enfilading fire against the Yanks. French and American pilots had repeatedly tried to destroy them, but without luck. The two Heinie 'sausages' were heavily protected by batteries of anti-aircraft guns and formations of protecting planes.

Now, 'strafing' balloons that were given this sort of protection was a ticklish affair, so much so that the Germans credited their own fliers with two victories for each balloon brought down. The Americans had already made a reputation at balloon strafing. But with all their efforts those two particular gas bags swung mockingly in front of their advancing lines. Luke asked the squadron commander if he might be allowed to go after them. The other pilots smiled inwardly. But off he went, trailed as usual by his pal Wehrner. They flew to a great height and then Luke suddenly dropped out of the clouds and dived straight at the face of the balloon. The attack took the Germans by surprise and he could easily have fired his flaming bullets into the great bag if his gun hadn't jammed. Of course his dive caused every near-by anti-aircraft battery to get under way and up swarmed the protecting planes. Luke climbed again. The German scouts were hot after him. Wehrner drew a couple of them away, but Luke seemed to pay no attention to the Fokkers. Up and up he

circled, and when in position again he turned her nose down and went into another dive, plunging straight through the hail of shrieking shrapnel from the German Archies. This time his machine gun did not fail him, the balloon went up in flames, and the observer jumped in his parachute. Luke and Wehrner headed for home, followed by the puffs of the Archies. When he eased his little scout onto the turf and taxied up to his hangar, the crowd that ran out found the balloon strafer's plane riddled with bullets.

Two days later Luke came home with a second scalp. This time, when he volunteered to go out and tackle a balloon, his offer was taken more seriously. A formation was sent along to cover his attack. The American planes had scarcely reached the rendezvous in the sky when they were set upon by a formation of Fokkers. The dog fight began, but out of the thick of it Luke dived toward the balloon. A shower of machine-gun bullets, anti-aircraft shells, and flaming onions greeted him. His fast dive missed. The dog fight was still on when he regained his altitude. Just below the swirl of darting planes he flopped over, and plunged once more straight into that aërial maelstrom of anti-aircraft missiles. A vast burst of flame shot up and the gas bag dropped in a cloud of smoke. Luke raced for home. When the wheels of his plane

touched the flying-field the machine fell to pieces. It had been hit in a hundred places — almost shot out from under him.

Borrowing another, that same afternoon he set off again. Once more a formation followed, and again his escort took on a formation of Fokkers. Just as he had done in the morning, Luke slipped away from the dog fight and made straight for his victim, Wehrner right after him. Eight more Fokkers, that had just come on the scene, swept down to drive them from the sky. Luke sped right through them, apparently never for a moment taking his eye off of the balloon he had spotted. Once more a burst of machine-gun fire and another German 'sausage' was out of commission. With absolute disregard for the anti-aircraft barrage the Arizona 'fighting fool' side-slipped and took a few shots at the observer who was swinging toward the earth by the parachute route.

From now on Luke talked of nothing but balloons. Day and night he planned ways of destroying them. He seemed to have a mania for this strafing game. Hour after hour he experimented with various types of machine guns and explosive shells and worked out new maneuvers to use against the gas bags. Whenever the weather permitted he would be in the air hunting them down. On September 15th he went out near a village called Boinville. Three other

NOTRE DAME AND THE ÎLE DE LA CITÉ
Like an exquisite miniature framed by the River Seine

FRANK LUKE OF ARIZONA
An American ace of aces, and the champion balloon-strafer of the World War

planes of the Twenty-Seventh Squadron followed, in time to arrive above the balloon sixty seconds behind Luke. Gas bags on the American side of No Man's Land were instructed to keep their eye on the Boinville 'sausage' at exactly five-five in the afternoon. Right to the dot the American balloon observers saw a Spad winging its way toward the American lines with five Fokkers on its tail and a burning 'sausage' lighting up the sky in the background. Luke landed just over the American trenches. His comrades thought he had crashed, but he had merely come to earth to get his bearings and to get information regarding another enemy balloon. A few minutes later he was high in the air again, and before half an hour had passed a second observation bag was in flames.

As usual he returned to his aerodrome with his little Spad riddled with bullets. But a telephone message from headquarters announced that there was still another enemy 'sausage' on the horizon. So in the gathering dusk he and Wehrner set out and at seven-fifty, just at nightfall, a great flame lit up the sky.

On the following day, the 16th of September, again toward sundown, Luke walked to his plane and called out to several pilots standing near by:

'See those "sausages"?' He pointed out two specks in the distant sky, fully two miles behind

the German lines, and about four miles apart. 'The first one is going up at seven-fifteen, and the second at seven-nineteen.'

He and Wehrner took off, and the men around the field stood with their watches in their hands and their eyes fixed on the distant bags.

'There she goes!' exclaimed Major Harold Hartney, the pursuit group commander.

A flare lighted up the horizon. It was exactly seven-fifteen.

By now the second balloon was lost in the dusk, but eyes were fixed on that part of the horizon where it had been seen a while before. At seven-nineteen there was a yell from the group on the flying-field. A second glare flashed at the point where they had fixed their eyes.

Two days later, on the 18th, the last half-hour of daylight found the two inseparable airmen above one of two balloons that the Germans had near each other on the edge of Three-Fingered Lake. No hostile aircraft were in sight. Evidently the enemy thought it too late to worry about attacks from Allied airmen. Luke went into a dive while Wehrner waited above, watching. It took three dives before he got his victim. Luke zoomed up to meet Wehrner when he saw a formation of six Fokkers bearing down upon him. Perhaps Wehrner had fired the rocket which was agreed upon as the signal for such an emergency. If he had, Luke in the midst of all

the blazing Archie fire had failed to see it. At any rate, Wehrner was now patrolling on a line to keep a path of retreat open for Luke. The German airmen had laid a trap for the two daring 'sausage' destroyers, who were now recognized as their two most dangerous antagonists. The Fokkers had lain in waiting hidden among the clouds, knowing that the two balloons would be bait that would surely draw the birds they were after.

Those six Fokkers were coming from the west. They had cut off the direct line of retreat to the American lines. But Wehrner was holding open a line of escape a little farther to the north. The second balloon lay still farther to the east. With characteristic rashness, Luke in a flash had made up his mind to get away by running east, deeper into Germany, taking a few shots at the second 'sausage' on the way and then slipping around the Fokkers. The German formation spread out to cut him off. Over balloon number two he made a single perfect dive, and the sky was ablaze with exploding hydrogen.

When he zoomed up, Luke saw himself entirely surrounded by German planes, save in the direction of Germany. Three more pursuit ships were closing in on him, making nine in all. Wehrner, never suspecting that Luke would be so foolhardy as to attack the second balloon under such circumstances, had kept to his post right

to the last. He now could have turned west and slipped off home, leaving Luke to shoot it out with the ring of enemies. But Wehrner was not that sort. Luke saw his pal sail straight into the three oncoming Fokkers, attempting to open a way for the balloon strafer. The three enemy planes directed a converging fire on the lone Spad. Wehrner's machine fell over on its side. Luke saw a path of fire leap from the gasoline tank. The Spad went down in flames.

Luke turned upon the three that had sent his pal into his last dive. They were above him, but, crazed with fury, he zoomed straight at them. Picking out one, he disregarded the others and poured a steady stream of bullets into the Fokker. The other two were behind him and he could see their tracer bullets streaking by his face. But his one thought was of vengeance and he kept after the Fokker until it fell in flames. That was number one, but it was not enough. He made a quick *reversement* and dashed at one of the other two planes that had been behind him. Another fierce burst of fire and it followed its comrade. Number two! The third German pilot turned tail and raced off as fast as he could go. Still Luke was not satisfied. He hunted around for the other formation of six that had first stalked him. They were darting away in the distance. Beyond, down to the north of Verdun, were fleecy white clouds, Archie shells

from his own lines. The Allied anti-aircraft shells gave off a cloud of white smoke when they burst, the Germans gave off black. Luke darted in that direction. He saw five French Spads hurrying to attack an L.V.G. photographing machine. Those same six Fokkers were cutting in ahead of it to cover its retreat. The L.V.G. was just ahead of Luke as he came up. He swung down on it like a rocket, firing both guns. The photographing machine fell into a tail spin and crashed near the old Verdun flying-field. Number three! The six Fokkers turned and headed east.

Frank Luke, the Phœnix high-school boy, in the short space of one afternoon, had shot down two balloons, two fighting Fokkers and one two-seater enemy observation plane, a feat unequaled in the entire annals of the World War. But it gave him no feeling of triumph. When he returned to the aerodrome his one question was:

'Has Wehrner returned?'

He knew the answer. It was the old case of hoping against hope.

With Wehrner's death Luke seemed to lose all spirit. For several days he did the routine work of flying in a restless way, and then asked for a vacation. The squadron commander was reluctant to give furloughs, for he surmised that a new enemy offensive was about to begin. Luke, of course, deserved leave if any one ever

did. He went to rest up in a small town near Paris, promising to report immediately upon receiving telegraphic orders. On September 26th, the opening day of the Argonne–Meuse offensive, he was recalled.

He seemed to have his old spirit once more. On the 27th he shot down a Hanoverian two-seater, and that evening got another balloon. He passed the night and the next day at a French flying-field. In the evening he flew over the American Balloon Headquarters and dropped a weighted note:

'Look out for enemy balloon at D–2 and D–4 positions. — Luke.'

They watched. A few minutes later a great glow lit up the sky in the direction of the German lines, and then, quickly, another. The balloon officers telephoned to the aerodrome, reporting Luke's two new victories. That night he did not return, nor the next night. The squadron commander vowed that when he did come back he would recommend him for a court martial and then the Legion of Honor. But they never saw Luke again. After he had shot down the two balloons, he had simply vanished. No word of his fate was heard until after the Armistice.

Some of the people of the little town of Marvaux had seen Luke's end. He had appeared, flying low. Perhaps his motor was injured, or

perhaps he had been wounded by anti-aircraft fire. The town was full of German soldiers. He swept over the houses and opened fire with his machine gun on a detachment of troops in the village street. He killed eleven of them, and wounded others. Then he swerved and landed in a field not far from a stream. He climbed out and headed for the stream. It seemed as if he wanted to get water. Several German soldiers made for him. He saw them and turned back to his ship and got his automatic. Shots rang out. He fell to the ground beside his plane. Nobody seemed to know whether he had had a chance to shoot or whether he had been shot by the soldiers running toward him or by riflemen farther back.

Some of the townspeople wanted to bury him then, but the Germans would not let them until the following day. Some averred that a German officer kicked his body. When the local citizens did take him to lay him at rest in the local cemetery, they found a great wound in his chest.

His comrades in the Air Service sought out his grave and placed a monument on it. Before his death he had received the Distinguished Service Cross and afterward he was awarded America's highest decoration, the Congressional Medal of Honor. In seventeen days he had shot down eighteen German aeroplanes and balloons, surely an unequaled record. He died America's Ace of Aces.

CHAPTER IX

AN AMERICAN KNIGHT OF THE AIR

Between Commercy and Toul we run into a terrific wind-storm that comes sweeping across the Vosges. Our little Spad is tossed about like a feather. At one moment we are looking down on Mont Sec, where the French and American troops fought like madmen against the Germans. A moment later it seems we are miles away.

Then the storm lulls a bit. We have climbed to five thousand feet and have found a quieter layer of air where it's not nearly so gusty. This is the same stretch of sky where scores of American airmen patrolled and fought in those autumn days of 1918, when Pershing was getting ready to let loose his storm of lead and steel against the Germans, who had held the spear-shaped Saint-Mihiel salient since September, 1914. In that Saint-Mihiel battle the American army successfully passed through its period of apprenticeship as an independent command. Before dawn on the morning of September 12th, General Pershing flashed an order to his divisional commanders, and the battle was on along a twelve-mile front. Over all that country, down there a mile beneath our wing, American batteries let loose an avalanche of shrapnel and solid steel. The

world suddenly seemed to have burst into flames. Under cover of an intense barrage, tens of thousands of American soldiers went over the top. In twenty-four hours the entire Saint-Mihiel salient had collapsed, and Pershing had taken over fifteen thousand prisoners and two hundred guns.

A few minutes after noon we come in sight of an ancient walled city with a circle of modern forts all around it. See that aerodrome over there, just to the south of Toul? For long centuries after we of this generation have 'gone West,' men will tell of the heroic deeds of America's knights of the air who made their headquarters here during the final year of the War. Down there in those barracks once lived Raoul Lufbery, Douglas Campbell, Jimmie Meissner, James Norman Hall, and scores of our finest pursuit pilots. It was from this same field that Eddie Rickenbacker took off and wrote history in flames across the skies of Alsace-Lorraine while piling up the string of victories that made him an American Ace of Aces.

We had been in Toul many times during those last months before the Armistice. Chase, my photographer, and I had just returned to the Western Front from the battle-fields of Italy, Macedonia, Palestine, and Arabia. Toul in those days was almost an American city. There were signs in English on every street

corner. American M.P.'s, with their bright red arm bands, stood there directing traffic. Doughboys from Vermont to California jostled each other on the narrow sidewalks, while khaki-colored Harley Davidson motor-cycles sped in and out between Cadillacs filled with Yankee staff officers.

But to me Toul is interesting chiefly because it was here that America's greatest fighting unit, the 'Hat in the Ring' Squadron, the famous Ninety-Fourth, made its headquarters.

I once asked Eddie Rickenbacker which he considered the toughest of all his many battles in the air. He merely chuckled and shook his head. Evidently he still had vivid memories of many of them. Of course there was a tremendous element of luck in flying during the War. The pilot nearly always looked at things from the point of view of a fatalist. If a bullet happened to have his name written on it, why, then he was in for a trip 'West.' If not, then he would get still one more holiday in Paris.

A number of brilliant airmen preceded Eddie Rickenbacker as commander of the 'Hat in the Ring' outfit. But he was the only one to survive the War. The day that Rick took over command of the Ninety-Fourth Squadron, he celebrated his promotion by jumping into his little ship and sweeping off through this same stretch of sky on a lone patrol. A little way out from Toul a pair

of German two-seaters appeared under him, apparently on a photographing jaunt over the lines. Behind them, several thousand feet higher up, flew five Fokker scouts to protect the observation planes if Allied airmen attempted to stalk them. Rick started climbing. Up and up he went straight into the sun, hoping to hide in its glare until the right moment came. The gods of the upper air were with him and he slipped far above the German airmen without being seen. Then, when he felt fairly certain that the blinding glare would prevent them from sighting him, he cut off his motor and dived for the nearest Fokker. Not until he was well within range and with his finger on the trigger did the German pilot see him. A stream of bullets poured into the cockpit of the Fokker. It tailed over and went spinning toward the earth. Rickenbacker kept right on in his steep dive, going at such a terrific pace that he was far below and out of range before the other Fokkers saw what had happened.

But the new leader of the 'Hat in the Ring' Squadron was in such high fettle that he decided to tackle the remaining four planes. Zooming upward he was above them again in a flash and then down he darted right into their midst. Although they had the advantage of superior numbers, the Fokkers broke formation. Rickenbacker's mind must have been working on all cylinders. He dived instantly for those two

observation planes far below. Their crews had seen the fight going on up above and were heading for home with throttles wide open. Rick, however, was plunging toward them from so far up in the sky that his speed was much greater than theirs. As he caught up with the nearest two-seater the observer in the rear cockpit stood up and attempted to get a bead on the diving American. Tracer bullets went streaking past Rickenbacker's face. In a flash he had passed them. Then up he zoomed, and came down upon them again. Meanwhile the four Fokkers had returned to the scene and the whole circus went tumbling deeper and deeper into Germany. Rick realized that if he got too far from his own lines he might not have enough gas left to reach Toul. It would have to be a hurry-up job. So he sent his little pursuit ship into a wild side-slip that quickly brought him in range of both two-seaters at the same moment. Sending a stream of bullets streaking between the blades of his propeller he raked them with the same burst so that his bullets passed right through the first plane and into the second. The nearest one broke into flames just as Eddie saw over his shoulder that the four Fokkers would be on top of him in a few seconds. With two scalps to his credit on his first day as commander of the Ninety-Fourth, he pushed his stick forward, went into a dive, and got back to Toul safely.

'It was just before dawn on the day of the great American drive in the Argonne,' Rickenbacker told me once. 'I had gone out alone, shortly before dawn, to see if I could take the Germans by surprise and shoot down one of their balloons at the time when they were usually sending them up. The earth beneath me was a black mass of nothingness, except for two parallel lines of fire. The guns on each side were drawn up in a closely massed line behind the trenches and I held my course through the sky directly above the twin streaks of flame. However, I was not out for a mere bird's-eye view of the War. After cruising along for some distance without spotting a "sausage," I decided that the next best thing I could do would be to dive down close to the ground and rake the lines of German troops with my machine guns, or perhaps a big Mercedes might come along somewhere behind the scenes with a brass hat in it. It is always amusing to see a pompous old stiff-necked general hop into a ditch and stick his face in the earth. It was growing lighter every minute now. I flew low behind the German lines, and all of a sudden I caught sight of a truck with a huge sausage-like form rocking back and forth over it. The truck was towing the balloon to its new hangar.'

Rickenbacker dashed for the *drachen* and pumped incendiary bullets into it until he was so

close to the balloon surface that he had to make a vertical *virage* to avoid a head-on collision.

Bang, bang, bang, and he thought his eardrums had been shattered. The men on the truck had opened fire with explosive bullets which had struck between his wings. He felt his plane drop. The machine-gunners were firing all around him. The balloon was below and some distance behind him. The observer had leaped from the basket and was still dropping. Then suddenly the mammoth gas bag exploded.

Although his plane was badly shot up, Rickenbacker managed to stagger over No Man's Land and get down on the nearest American landing-field. He could hardly resist a shout of exultation over his good luck in getting the balloon and riding safely through that hail of explosive bullets.

But his exultation was short-lived, for he now learned that two of his best pals, Lieutenants Nutt and Sherry, who had gone out early the previous afternoon, had come to grief. Sherry got back alive, but Nutt had been killed in combat. The fliers of the 'Hat in the Ring' Squadron used Spads, planes much like the one in which we are winging our way toward Constantinople. Nutt and Sherry boldly attacked a formation of eight Fokkers, but the Germans apparently were veteran pilots and Nutt crashed after a bullet went through his heart. Sherry's motor was shot up so badly that he had to go into

a glide with all eight of those Fokkers whirling around him, trying to finish him off. He started his volplane at an altitude of about twelve thousand feet and the Fokkers swooped around and around him during all those two miles, until he reached the earth. Of course his plane was riddled and he himself escaped death by sheer good fortune. When he got to the ground he had no idea where he was. His battered bus flopped into a shell hole and broke into a hundred pieces. The jar hurled Sherry into another shell hole, and as he lay there the Fokkers kept diving on him, spraying him with bursts from their machine guns. Again and again they swooped down upon him, squirting their slugs of lead and steel into that small shell pit. Sherry tried to dig in with his fingers. Then he rolled over as though dead. As he lay there, staring up into the sky, expecting every moment to be his last, he saw a formation of Spads diving toward the Fokkers. Sherry crawled out of his hole now and decided to find out where he was. He had an idea that he was somewhere behind the German lines when suddenly a yell came from a neighboring shell hole:

'Hey, there, you guy, where'n the hell's your gas mask?'

Sherry half ran and half tumbled toward the voice and plunged alongside a doughboy, who added:

'Don't you know this here's No Man's Land? Man alive! Fritz has been plopping gas shells into this area all afternoon. And what's more, I guess you'll have to stay right here because them Heinies are right over there and they'll tear your can off if they see you moving. You'd better stick here with me in this hole until it's dark. Then maybe we can crawl for it and make the first-line trench. Here, take my gas mask. Guess I know more about the stuff than you do. I can take care of myself without it.'

So the doughboy gave the airman his mask, and they whiled away the rest of the day on the bottom of that shell hole in No Man's Land.

Late one afternoon, while flying over the lines just north of this section of sky through which we are swinging, Captain Rickenbacker saw a flame shoot up on his left. Evidently some late prowling German balloon strafer had slipped across the lines and brought down an American gas bag. Rickenbacker swung into position to cut off the plane on its way home across No Man's Land. The light was getting bad and the American pilot could see nothing of the enemy plane. But the burst of anti-aircraft shells marked its course, indicating that the victorious balloon shooter was heading straight toward him, a bit lower down. This meant that he would be due for a hot reception, with the

EDDIE RICKENBACKER

Commander of the famous Hat in the Ring Squadron, who came off victorious in more than a score of battles with the red-nosed Fokkers

TO ANY ONE FOND OF EERIE GRANDEUR LET ME RECOMMEND A FLIGHT ABOVE THE CLOUDS

commander of the 'Hat in the Ring' pouncing upon him.

Eddie was chuckling to himself when suddenly streaks of fire whizzed past his face. Intent upon the lone raiding plane, he had neglected to keep his eye over his shoulder. The balloon strafer's trail was covered by a protective formation of Fokkers who had seen the American hovering there and had stalked him without his knowing it.

It flashed through Rickenbacker's mind that the Fokkers would expect him to dive and would act on that assumption. Without waiting an instant, he acted on impulse. Instead of diving, he zoomed up into a climbing *chandelle.* As he did so, two red-nosed Fokkers, old friends from von Richthofen's Circus, shot past him. His hunch had been correct. He had outwitted them. But just as he was congratulating himself, he saw two more Fokkers circling a bit higher up, and ready for just this maneuver, the climbing *chandelle.* Skillful pilots, these. They had considered all of the possibilities. Rick realized that he was in for the fight of his life. He quickly forgot all about that impudent balloon strafer. His one thought was how to get out of this jam.

'If ever I had the wind up it was then,' said Rick in telling of this fight. 'But I knew that if I lost my nerve, then I would be sure to fall an easy victim to this Fokker circus. There was no time to think out a plan. The skillful way these

men were maneuvering left me breathless. So I instinctively decided to start something myself before it was too late.'

Those two planes that had missed him at the first dive were waiting below with an arrogant air. They had his line of retreat cut off. The two above were diving toward him. So he tipped over on one side and with the wind screaming through his wires he side-slipped toward the nearest Fokker 'downstairs,' firing with both guns as he fell. Instead of aiming right at his man he drew his bead a few yards ahead. So the only way the German could possibly avoid his line of fire would be to dive or side-slip also, in either of which cases he would provide a still better target. Rick had guessed right. The German airman flew head on into his stream of tracer bullets. Fire shot from gas tank and the red-nosed plane went flaming toward the earth.

The sight of it gave Rick confidence. He looped quickly, without looking, knowing that the two Fokkers upstairs might now have him within range. Instinct had warned him right again. As he came to the top of the loop, he found himself above all three of the Germans. There is nothing so disheartening as to see a comrade go down in flames. It is enough to shake the stoutest heart. The three Fokkers were heading for home.

Although Rick had just slipped out of the

worst trap into which he had ever fallen, his reaction was one of resentment for the scare these other war birds had given him. His Spad, a heavier machine than the Fokker, rapidly gained on the diving trio. One of the latter seemed to be having engine trouble and was dropping behind the rest. At a thousand feet off the ground Rick opened fire and a moment later the Fokker went crashing toward the earth. When Rick pulled out of his dive, he was within a hundred yards of the trenches, streams of bullets were zipping past him, and the ground seemed fairly swarming with German soldiers all blazing up at him. But his luck held, and he somehow managed to stagger home with his wings and tail looking like a Swiss cheese.

Every American boy should read the book that Eddie Rickenbacker wrote when he came home from France. His 'Fighting the Flying Circus' is more thrilling than any Wild-West novel. One of his most stirring stories is of the death of Lufbery, the first American Ace of Aces.

Some say that tales of air fighting tend to make the average person afraid to fly in an airplane. In fact many people think that the progress of aviation has been retarded because so many people associate flying with aviators leaping from flaming coffins. But there should be no more reason for this than for refusing to ride horseback because knights of old fought each other

from the backs of galloping chargers, just as our aërial knights of to-day do their fighting in speedy pursuit planes.

The storm is still pretty lively when, shortly after leaving Nancy, we start to cross the main range of the Vosges. During the first few minutes we look down on thousands of shell holes, more than we have seen in all the rest of our flight from Paris to the Rhine. For four years the Germans and French faced each other across this narrow stretch. The mountains are covered with forests, but there are many cleared spaces, most of them quite large enough for a Spad to park in if necessary. But our Lorraine motor hasn't missed a stroke since we took off at Le Bourget. No matter how many air bumps we hit, no matter how much we are thrown about the sky, its rhythmic hum goes on and on. In a driving rain we descend a few miles this side of the Rhine on a flying-field near the village of Entzheim, on the outskirts of Strasbourg. A bus takes us into the city, where we rest up, enjoy a quiet dinner at the Maison Rouge, stroll around to the cathedral, and then turn in for a few hours' sleep before boarding the night plane that is to fling us through the night, up the valley of the Rhine to Switzerland.

CHAPTER X

A NIGHT FLIGHT UP THE RHINE TO SWITZERLAND

It was a sleepy concierge that rapped on our door at two A.M., but not too sleepy to have remembered to bring us a tray of *croisson*, *café au lait*, and boiled eggs. He announced that the auto-bus of the Compagnie International de Navigation Aérienne was already chugging at the door. So in fifteen minutes we had breakfasted, dressed, packed our bags, and were racing at fifty miles an hour through the echoing streets of Strasbourg. Arriving at Entzheim we found the aerodrome lit up by flashing boundary lights, lights from the open hangars, and a huge movable searchlight on wheels. A four-engined Jabiru monoplane with its enormous thick overhead cantilever wing was 'on the line,' fire shooting from her exhausts.

Most of the night flying on this Paris to Constantinople route has been across the Carpathians from Belgrade to Bucharest. Tri-engined Caudrons have flown that stretch by night for several years, and without mishap. In fact it was the first regular night passenger line in the world. But this week the French are conducting a series of night-flying experiments with Entzheim flying-

field as a base. So we have been asked to take the southbound Jabiru which leaves at a little after three A.M. for Basel. Somewhere in the sky we may expect to meet another of the planes on this run, coming in the opposite direction, and are curious to see what sort of night-flying traffic rules they observe.

Without formality of any kind one of our two pilots waves us into the big cabin. There are twelve seats, but only two of us to occupy them. An aerodrome 'trouble-shooter' slams the door, we taxi across the field, turn into the wind, and then the noise of the four engines increases to a deafening roar that shakes us like an electric massaging machine. With a short run and a bounce or two we leap into the night. A few moments later the blinking red boundary lights on the field far below become mere flickering dots, and we climb so fast that even the great city of Strasbourg looks like a sleeping village. The moon is in the third quarter, so we have no trouble making out a ribbon of silver that we know to be the Rhine. We fly along it, and see the glinting of a million mirrored stars.

Before many years now there will be a night airplane service between every important city in Europe. Already some of the airways are being equipped with aërial lighthouses, whose one-hundred-thousand candle-power rays swing round and round like the spokes of a giant wheel.

Near Dijon, on the summit of Mont Afrique, the French aviation authorities have erected a billion candle-power aërial lighthouse. If strings of these are ever placed across Europe the heavens will be illuminated like the sky above the Seine on the night of the 14th of July.

Although comparatively little time has been spent on the development of night flying, nevertheless remarkable strides have been made. We realize this when we think of those early experiments a few short years ago when buckets of blazing gasoline were used as ground flares for landing. Nowadays airmen even regard it as amateurish to fly off into the dark equipped with wing-tip magnesium landing-lights operated from the cockpit. They are beginning to equip their planes with powerful anti-dazzle headlights. Ever since war days planes taking off at night have carried parachute flares that could be dropped overboard in order to light up the country in case of a forced landing.

It is three-thirty now; we have just passed over Mulhouse; and, except for an occasional series of straggling lights in a village far below, we seem to be alone, hurtling through the night, like some celestial Jonah in the bowels of a thundering, vibrating demon. But we are not alone, for here coming straight toward us is a glimmer that looks like a shooting star — the headlight of the northbound Jabiru. Obeying

the rules of the air we swing aside. The aërial passenger coaches pass each other like two flaming comets bound in opposite directions. Both are traveling at better than one hundred and twenty miles an hour. A flash of her green sidelight and of her illuminated cabin with three faces at the windows, then a fleeting glimpse of a tail light, and the sister ship has vanished into the night like a ball of fire from a Roman candle.

We are racing along more than a mile above the Rhine and except for the faint outline of the river far below it is impossible to tell what the landscape is like. Lulled by the tremendous hum of our four 180 H.P. Hispano-Suiza motors, my wife has fallen asleep. Somehow it's a bit lonely away up here so far above the world of men.

'If loneliness be mine
(And loneliness, I know is every man's)
Let me be lonely in a quiet place,
Among the trees and grass,
Or by the sea,
Or on a distant hill,
Or desert waste.

'I would be lonely in a quiet place
Wherein remembrance dwells
Of simple things —
Pebbles and planets,
Dragon-flies and dust.

. . . . . .

'If loneliness be mine
(And every man's)
Let me be lonely in the night
Alone.'

Although flying through the night gives you a lonely feeling, there is nothing particularly silent about it when you are in a plane propelled by four purring motors. Here and there a light in a farmhouse indicates that some Alsatian peasant is astir, and as we speed on toward the Swiss frontier I lapse into reverie and let my thoughts wander back to the last time that I visited this part of Europe — the time when Webb Waldron and I slipped through the lines by night and made our way to Germany to follow the revolution that was sweeping over Central Europe after the collapse of the Kaiser's army.

Waldron and I were in Paris the day the Armistice was signed. Wild as the celebrations no doubt were in London, Rome, New York, and other Allied cities, surely Paris was the most interesting place in all the world on that memorable 11th of November, back in 1918. Never had I beheld such scenes of emotion and never do I expect to behold such scenes again. It seemed as though every man, woman, and child in the French capital, together with hundreds of thousands of soldiers of every Allied army, had massed in the Place de l'Opéra and on the boulevards. For a time we were swept along with that

frantically joyous stream of wild humanity. All the pent-up emotion and joy that had been held down for four long years seemed to bubble out in a few hours.

The following morning Waldron, who was then the European editor of 'Collier's Weekly,' and about ten more of us, were invited by the French Government to visit Alsace-Lorraine. They wanted us to make the trip ahead of the army of occupation in order to see for ourselves whether or not the peoples of Alsace-Lorraine were really pleased at the prospect of once more becoming citizens of France.

We motored across the Vosges Mountains, through a score of towns and on down to Strasbourg. Although there seemed little doubt but that the majority of these joyful people were delighted over the outcome, there was something else, something far more dramatic that attracted us when we got to Strasbourg. The last German stragglers had just retreated across the Rhine a few hours before our arrival, and stories were coming over the bridge from Baden to the effect that all Germany was in the throes of revolution, that it had turned from Kaiserism to Bolshevism overnight. This was the sole topic of the hour. But it seemed incredible. If true, then who knew but that all Europe might be set afire. Cynical army officers were inclined to scoff and suggest that these rumors of revolution were merely

a part of a typical Teutonic plan to make the Allied peoples think they had suddenly turned democratic and thus win easier terms at the pending Peace Conference. Those tales from across the Rhine were so conflicting and fantastic that we all longed to go right on east from Strasbourg and see this German volcano in eruption with our own eyes. But this was well-nigh impossible for two reasons: In the first place, were we not visiting Alsace-Lorraine as the guests of the French Minister of War? So how could we take 'French leave' without committing a grave breach of courtesy? Then there was another reason. The bridgeheads over the Rhine were heavily guarded. Absolutely no one could get permission to cross. Marshal Foch, generalissimo of the Allied armies, had closed the frontiers tight. He quite naturally, and quite correctly, suspected that if the frontiers were at once opened to travelers, hordes of idle curious would pour into Germany just to have a look. This might give the Germans a chance to spread dangerous propaganda and play upon the feelings of these visitors — especially the gullible and open-hearted Americans who were never going to be obliged to live next door to Germany anyhow. Hence it was best to keep observers and others out of Central Europe for the present.

Waldron and I both agreed with Marshal

Foch, but, like all other men of journalistic training, we were eager to get into Germany and find out the truth about this revolution. We decided to try and slip through the Allied lines. So we hurried back to Paris, reported ourselves in at the French War Ministry, thanked them for our trip through Alsace-Lorraine, and a few hours later were on our way east toward the Rhine again.

We were entirely on our own this time, without any courteous French liaison officer to chaperon us. For several days we made our way up and down this same west bank over which we are now flying. The French army of occupation was there in force and with fixed bayonets. Every foot of that river was under the observation of the French patrols. We tried to evade them at the bridgeheads, and we even had a shot at swimming the Rhine one night. But searchlights spoiled that plan. Even if we had got to the other bank, we should have had no wardrobe and our chances of getting far into Germany in our birthday clothes would have been nil. Then, too, we had cameras that we were anxious to take along.

Our aimless and apparently futile wanderings through this region finally brought us to a little frontier town. Although Delle is in French territory, it touches the border and is only a few miles from the Swiss city of Basel. We had

heard that Swiss Red Cross trains were coming into Delle every day, filled with wounded Allied soldiers. Possibly we could find some way of concealing ourselves and getting into Switzerland on one of these trains. Marshal Foch, having closed even the frontiers adjoining Holland and Switzerland, in order to prevent travelers from entering Germany or Austria through those countries, it was just about as difficult to cross their borders as to swim the Rhine.

Of course hundreds of newspaper men had the same bright idea as ours. You might almost say that they were lined up on the German border in their running-shoes. Some were trying to get in via the North Sea, others by way of Russia or across the Baltic, or down through Denmark. But so far as we know we were the first to reach Berlin — that is, without being hustled right out again as were three other American newspaper men who managed to beat us by a few days. They drove in an American army car through the German lines at a point on the American front. Upon reaching the Rhine they hired an airplane at Frankfurt-am-Main and flew to Berlin. But General Pershing, hearing of their escapade, had them brought back at once. We were luckier, for when we at last got across we did it without being discovered and without being collared.

At Delle we found Swiss trains arriving every

morning and evening. But they came only as far as the frontier. There they were met by French trains to which the wounded were transferred. This rather complicated things for us. However, one evening, just as it was growing dark, we managed to elude the guards at the railway station. For a few minutes we mingled with the crowd of refugees, and then when we thought no one was looking we climbed aboard the Swiss train and hid in a toilet. But a French officer had seen us. He reported to the commandant and a few minutes later men were banging on the door of the toilet with their rifle butts. When we opened up they wanted to know where we thought we were going.

'To Paris,' we replied.

Whereupon they marched us right off that train in a hurry. The colonel in command of the French forces at Delle examined all of our papers. Luckily he was a cheery soul and soon made up his mind that we were not German spies. Later in the evening he put us on a northbound train headed for Paris. If the Armistice had not already been signed, our adventures might have ended right there, for we learned that German secret service agents were supposed to be using this same route.

Instead of obeying orders and staying on the Paris train, we jumped off at Belfort when the guards were not looking, and then cut across

the open country of Alsace, making for the city of Mulhouse under cover of darkness. Our jaunt took us across a region of shell craters that until recently had been a part of No Man's Land.

We hadn't a plan in mind when we reached Mulhouse. But neither had we given up hope. While wandering about the streets the following evening we came upon a cabaret that had just changed its name from something typically Germanic to *Maxims*. At the little table to which we were ushered, lo and behold, we found a young American, wearing the uniform of a French ambulance driver and still celebrating the end of the War. Seeing that we were fellow countrymen, he had another Martini, became garrulous, and told us the story of his life.

'Just at present,' said he, 'they've got me picking up stragglers. A lot of prisoners from Germany, many of them wounded, are starting to drift across the Rhine and around through Switzerland.'

Thinking that it at least could do no harm, we told him what we were up to and he immediately offered to help us out. In fact a few more cocktails and he might have tried to ford the raging Rhine with his Ford ambulance. He said that his credentials permitted him to drive anywhere in Alsace, right up to the frontiers — but not beyond. If we wanted to have another shot at it, why, just climb into his ambulance that night

and he would take us to some lonely point on the border.

When we studied the map we saw that there was one road that went right down to the southernmost tip of Alsace and then, turning abruptly to the west, ran parallel with the frontier for several miles. From the map it looked as though this stretch of road was within a few hundred yards of Switzerland. If so, maybe we could get within striking distance of the border before exciting suspicion. Fortunately there was no moon and along about midnight we set out. All went well till we got within three miles or so of the bend in the road. Then we began to encounter guards. They stopped the ambulance several times, held up their lanterns, glanced at the car and driver, failed to notice us huddled in the bottom of the bed, and then let us proceed. After driving for several miles along that stretch where the highway ran parallel to the frontier, the ambulance pulled up, we jumped out, thanked our friend, and stood watching the car disappear into the gloom. While we stood there, uncertain as to which way to go, we saw a figure approaching. Our knees shook and we had visions of being arrested again. But the midnight prowler turned out to be an Alsatian peasant on his way home from the village *estaminet*. Not knowing the exact location of the frontier we thought it might be worth while taking a risk, so Waldron

FOR CENTURIES PEOPLE HAVE CLIMBED THESE MOUNTAINS TO ENJOY THE VIEW FROM ON HIGH

ON OUR RIGHT IS THE LOFTY CENTRAL ALPINE CHAIN OF SNOW-CAPPED, KNIFE-EDGE PEAKS

slipped him a bank note and asked him the best way to the border. I have forgotten now just what excuse Waldron gave. At any rate, the money apparently quieted his suspicions and he struck off along a cow path, down a ravine, and up a little hill until we came to a tree. There he stopped and absolutely refused to go another step. Pointing to the south he said the frontier was only about fifty yards away. But he urged us not to go on, and assured us that if we did we should be shot. He said the border was heavily guarded by French Moroccan troops who were under orders to fire at anything suspicious.

We could hear the soldiers whistling a short distance off. But it was an inky night and we decided to take the chance. So thanking the peasant we got down on our stomachs and crawled. We wriggled across the fields for what seemed like an hour. Then we got up and ran, crouching as low as we could. After a half-mile or so we felt certain the frontier was behind us. If so we had been in great luck, because we had heard in Delle that this entire section of the Franco-Swiss frontier not only was guarded by a line of Moroccan soldiers, but was also heavily barricaded with barbed wire and a fence of iron spikes nine feet high, with Swiss patrols on the other side. The object of the heavy guard was to keep Bolshevik agents from getting across into

France by way of Switzerland. During that last year of the War the Russians had been spreading their propaganda in France with such disastrous results that a number of mutinies had broken out in the French army.

At any rate, we found no fence and no barbed wire. After a few more hours of walking across ploughed fields we saw far off to the left a glare in the sky which we imagined to be from the lights of the Swiss city of Basel. We were afraid to hike along any of the roads for fear that we might be picked up by Swiss patrols. It would certainly excite misgivings if any one happened to see two chaps in military uniform, carrying knapsacks, hiking through Switzerland at that hour of the morning. The authorities would most likely turn us back into France as suspicious characters. So we kept to the ploughed fields and scaled fence after fence. At last shortly before dawn we found ourselves with the lights of the city to the west of us. We surmised that we had been successful in circling Basel and we hoped before long to reach the bank of the Rhine.

One reason we had chosen this route was because just east of Basel the Rhine leaves the border and swings into Switzerland. We had an idea that if we could once reach its banks, we might find an unguarded bridge where we could cross, and that, having passed the bridge, it would be easy to slip over the land boundary.

It is always easier to guard a bridgehead than a stretch of open country.

About three o'clock we came to a large river which we knew must be the Upper Rhine. But we had no idea where a bridge might be found. Striking right through the eastern outskirts of Basel we at last came to a railway trestle. Although annoyed by barking dogs, we saw no human beings until we approached the bridge. There hanging over the rail was a young Swiss and his sweetheart. They were too absorbed in each other to look at us. Nor did we do any yodeling to attract their attention. Although the bridge was designed for trains and not for persons on foot we started over it. Halfway across we passed a man coming in the opposite direction.

'Guten morgen,' said he.

We wished him the same, and were glad enough to let it go at that.

Once across the Rhine, although dead tired from our long night hike over the ploughed fields of Switzerland, we stopped for a moment and did a little Highland fling. But as so often happens, we danced too soon.

Striking out along the road to the north, we headed in what we hoped was the general direction of Germany. We were so tired that we sat down for a bit by the roadside, and while there a Swiss frontier guard rode by and eyed us

quizzically. Just as we were getting ready to make a run for it, he came back and demanded that we accompany him into Basel. Although we were not aware of it, at the moment we were picked up we were within a hundred yards of Germany! But we were so weary by now that we didn't care a hoot whether we were arrested or not.

On our way into the city we tried the gentle art of persuasion on our guard with such success that instead of taking us to the calaboose he led us to a little hotel. He even aroused the proprietor for us, laughed off that worthy's suspicions, and got us a room.

Here we were in Switzerland, but it appeared as though we were just as far from Germany as ever. The next morning we decided to try a new scheme. We got hold of an influential American in Basel and told him our whole story. He was a fine fellow, heartily approved of our plan, and only regretted that his official duties made it impossible for him to join us. He in turn interceded with the Swiss commandant of Basel, who happened to be a friend of his, and that gentleman turned out to be such a good sport that he arranged for us to be passed through the frontier guards the next evening. Our Swiss friends told us that most luxuries were practically unobtainable in Germany and that we might find them worth their weight in gold. So,

staggering under a load of chocolate, English tea, Virginia cigarettes, and Havana cigars, we were slipped across the frontier, and on the other side boarded a wheezy German train that took us to Frankfurt in Baden.

We were in Germany all right. But every one eyed us suspiciously and we had visions of being arrested at any moment. We decided to do the boldest thing we could think of, in the hope that it might be the best way out. Upon arriving in Frankfurt we inquired the way to military headquarters, and were directed to the *rathaus*. There we found the Red flag flying. Upon entering the building and asking for the office of the military commander of the city, we were directed to a room where we found a corporal, a college professor, and a lawyer. These three worthies were now the heads of the Government. They were leaders of the local Socialist Party that had just seized control of the city. Apparently they were even more astonished than we were and asked us if we were the advance representatives of the American army coming to occupy Baden. It seems that many wild rumors were afloat up and down the Rhine at that time. One of these was to the effect that the American forces intended to occupy Alsace-Lorraine until a plebiscite could be taken, and another was that the Americans might even cross the Rhine and occupy part of Germany.

When we told them we had come merely to find out whether their revolution was real or a fake, and whether or not the German people were actually starving, they welcomed us enthusiastically and gave us an *ausweis* stamped with the seal of the old Imperial Government! This pass was to take us on north as far as the city of Karlsruhe, where they said we should find the heads of their new provincial government.

To make a long story short, we proceeded to Karlsruhe, got more credentials of the same sort, interviewed most of the heads of the new régime, spent an afternoon with Prince Max, the last Imperial Chancellor, at Baden-Baden, visited deserted Heidelberg, and then continued on our journey. We visited most of the larger cities, including Munich, Leipzig, Berlin, Hamburg, and many others. In all we remained in Germany for nearly three months, following the various stages of the Revolution. Then, after having got in, it was a question of getting out, but of that more anon.

It is nearing dawn now and I must arouse my wife. Straight ahead are the lights of Basel. What a difference it would have made to Waldron and me if we could have taken the hurdle in an airplane that night nine years ago when we ran the frontier guards! Our flight down the Rhine from Strasbourg to Basel has taken us a mere

fifty-five minutes. In that short time we have flown over one hundred miles. And it took Waldron and me six hours to hike less than twenty miles on that night when we crawled into Switzerland. It almost makes me weep to think of it!

If we ever have another world war what thrilling tales there will be of escapes and hurried night flights in mysterious airplanes!

Here we are coming down at Basel. There is the very bridge that Waldron and I crossed, and here is the flying-field right beyond.

The Swiss ought to buy an International Harvester mowing-machine and put it to work here on this aerodrome where we land in knee-deep grass.

A cup of Swiss chocolate, a Swiss roll, and then we are to go Hannibal and Napoleon one better by flying over the Alps instead of climbing 'em. Where it took Hannibal three weeks to drag his elephants across the snowbound passes we shall take the sky route and be on the other side in less than three hours.

CHAPTER XI

LOOKING DOWN ON THE ALPS FROM THE SKY

BASLE flying-field is right on the edge of the Rhine, so near that in taking off an airplane might easily be transformed into a submarine. But we shoot over it almost in the twinkling of an eye and are soon soaring high above the curving river with the city, its crocketed spires, gay roofs, and suburban chalets growing less and less distinct.

To the north the Black Forest, under us the storied Rhine, to the south the Alps. What a glorious sight! We say this nearly every day on our air tour of Europe. But Switzerland from the air would naturally provide as superb a spectacle as Switzerland from the ground. For centuries people have climbed these mountains to enjoy the view from on high. But here we are on high all the way. Indeed before this day's jaunt is over, we hope to have outdistanced Switzerland's topmost peaks. Long, long ago I lived for many years far up in the tops of the Rocky Mountains of Colorado. One of the gold mines where I worked, the American Eagle, was at an altitude of ten thousand feet. When we shot out of the shaft in the bucket every afternoon on our

way 'off shift,' we would blink our eyes in the sunlight and look for a hundred and fifty miles across the valley to the west. There on the rim of the horizon was one of the loveliest snowy mountain ranges on the planet, the Sangre de Cristo. Often there was a purplish Alpine glow above it. And from the window of our airplane cabin these high ranges of Switzerland look much the same.

This lovely, poetic plain, which includes the plateau cantons, is green and quiet, just like the typical Swiss pictures you have seen. Far below are snug villages with steep-pitched, red-roofed cottages, meticulously neat fields, and grazing cows. It all looks like a fairy book.

On our right is the lofty central Alpine chain of snow-capped, knife-edge peaks. We are up to ten thousand feet now, but those snowy summits are still higher. At Sackingen we swerve to the right, leave the Rhine, and continue climbing higher and higher. The pilot points off to the north. There, perched high on a crag, is a picturesque Hapsburg castle. Far to our right a glistening snowy peak thrusts its head. It is the Jungfrau, one of the world's mountains of romance. Although fully sixty miles away, it seems a third that distance and its height of 13,428 feet and our own present altitude are about the same. If we were over there we might alight on its crest and then ride down the funicular.

As we cut straight across one of the most for-

midable mountain barriers that earthbound humanity has ever had to face, our imagination needs little stirring to take us back to the first famous crossing of the Alps, when for fifteen days Hannibal and his army struggled across from France into Italy. Shades of Hannibal! What would he say if he saw our soaring airplane in swift flight where he struggled so desperately with his Numidian foot soldiers, his horsemen from the Sahara Desert, and his elephants? Hannibal lost half of his army in that dreadful passage, yet when he debouched onto the Italian plain he was able to crush the Romans because he had taken them so thoroughly by surprise.

Much the same tale is to be told of events more than two thousand years later. Another great captain crossed the Alps to take the enemy in Italy unawares. In this case there were no desert horsemen, no elephants; but there were cannon! For a week the army of Napoleon struggled over the glaciers. With ropes and tackle the soldiers dragged the guns up the icy slopes. It was nearly as desperate as Hannibal's venture. The Austrians, camped in Italy, were as much astonished as the Romans had been, and the name of Marengo was added to the glory of Bonaparte.

I wonder what remark Napoleon makes to Hannibal about our modern way of crossing the Alps, as they gaze down from their grandstand seat in heaven?

Perhaps you will recall the first time any one ever flew over the Alps? It was brilliant and disastrous, one of those tragic events so common in the early days of flying. The hero of the episode was Georges Chavez, a young Peruvian who had already made a name for himself in those halting, grasshopper jumps which were considered flying only a few years ago. Blériot had flown the Channel not long before. The Alps beckoned a second victory to be won. So on a day in September of 1910, Chavez took off, climbed to the ceiling of his Blériot monoplane, and headed across the Alps toward Italy. Presently his little plane was above the crest of the mountains. Italy lay before his eyes. Then he volplaned down. Now he was only a few score of feet above his landing-place, at Domodossola. All that remained now was to drop gently on a level, perfect landing-field. In a steep glide he came sliding down toward the turf and was within a few feet of the ground, ready to straighten out. But he never did straighten out. Instead, his monoplane continued its steep, swooping descent and crashed into the earth. In these days of patent shock absorbers and sturdy planes such a crack-up would probably mean little more than a good shaking. But in those days a plane was a mere assemblage of sticks with the motor ready to crush down upon a pilot. Chavez was killed.

The cause of the accident was never finally settled. An examination of the wreckage indicated that nothing had gone wrong with the steering mechanism of the plane. Nor could the clumsiness of the pilot be blamed. Chavez was one of the most skillful and experienced of Blériot pilots. The surmise then was that he had been numbed by cold. In 1910 pilots were not encased in a warm cockpit, but flew perched out in the open, nor were they even clothed in a way to resist the cold as they are now. Chavez may have been so benumbed by the icy air above the Swiss glaciers that when the time for landing came his limbs were too stiff to work the controls promptly. But no man knows what went wrong.

How rapidly aviation progressed during a few short years is shown by the fact that in 1910 the first flight across the Alps was one of the wonders of the day. Then four years later came the World War. Then during four brief years the sky above the Alps — that is, above the Italian and Austrian Alps — saw knights in fast planes darting across the heavens and pouncing upon each other. The fighting in the air on the Italian Front, while there was not so much of it as over the lines in France, was, in many respects, a more hazardous undertaking. In France and Belgium, and in Russia, too, the planes flew over flat country where emergency landing-places could usually be found. But the great battle-grounds of the

WHAT WOULD HANNIBAL HAVE SAID?

WE CIRCLE HIGHER AND HIGHER, GAINING ALTITUDE IN ORDER TO CONTINUE OUR GAME OF LEAPFROG WITH THE ALPS

Isonzo, the Trentino, and Monta Grappa were in wild regions much like the sections we fly over en route to Zurich, Innsbruck, and Munich. A plane forced down above the Alpine battle-fronts had small chance of finding parking-space among the jagged peaks and yawning chasms. Hence the flying-fields had to be a long distance behind the lines, on the comparatively level country or in the foothills.

The Italians did a lot of effective work with their huge Caproni bombers. Occasionally they raided far into Austria and dropped their T.N.T. 'eggs' on railroad junctions and munition dépôts. On one occasion twelve Capronis left their base near Pordenone and started out in formation to bomb an Austrian supply dépôt a hundred miles beyond the front line. They zigzagged over the Alps and then ran into a fog so dense that several bombers got lost from the rest of the squadron. One of these was the 'flagship' carrying Squadron Commander Barbieri. When the front lines were passed, the 'flagship' was still missing. A swarm of Austrian combat planes had cut it off and swooped to the attack.

A fierce battle followed. A single huge, lumbering fighting bird surrounded on all sides by a flock of savage wasps, circling, darting, stinging. The machine guns on the big Caproni spurted streams of tracer bullets. But the swift pursuit planes hung on relentlessly to their prey. Colonel

Barbieri worked the forward machine gun. A bullet crashed into his forehead, and he fell dead. Another officer, Captain Bailo, was at the rear machine gun. He was hit and sagged dead in his seat. The remaining Italian, Captain Salmone, was at the controls. The big plane was helpless now, nothing more than a target. The pilot, as he sat between his two dead comrades, was struck in the head. The bullet slit his scalp open, and he was blinded by his own blood.

The Austrians, seeing that the two gunners aboard the Caproni were dead, were sure of their victory. They circled around the helpless monster, signaling to the pilot to surrender. Surrender Salmone would not! Doggedly he headed back for his own lines. Now the storm of machine-gun fire began again. The wasps circled around and around the fleeing giant, mile after mile. The plane was riddled. Still the pilot held to his course, finally making his way so far behind his own lines that he shook off the Austrian and German combat planes and landed safely.

Below us now is the little city of Brugg, and these three rivers joining here are the Aarau, the Reuss, and the Limmat, that go to swell the Rhine. Ahead, and far below, is a sheen of silver, the Lake of Zurich. A moment passes and we are over the largest city in Switzerland and on our way to the airport across a hogback of low hills to the north.

Imagine a lake, clear and blue like a jewel, set in vivid green banks, and with a spotlessly clean city at one end. That is Zurich. And all the surrounding hills are studded with pretty Swiss chalets. In the background are the snow-capped mountains. The whole scene is almost too perfect. It is more like some idealization of what the Alps should be than mere mundane actuality. But we have often visited Zurich and now we are Constantinople-bound. So we change planes and set off toward the Austrian Tyrol.

As we circle higher and higher, gaining altitude in order to continue our game of leapfrog with the Alps, we catch sight of another lake, this one of more importance — aeronautically speaking. It is the Boden Zee, or Lake Constance, where the Zeppelins were built that once dropped bombs regularly on London and the English east coast ports. We had been through some of those raids and later on we are to fly over Lake Constance.

We are now flying over peaks that are eight thousand and nine thousand feet high, not much of a place for a forced landing, and our motor is knocking a bit too. Something is always taking the joy out of life! Those mountain-tops below us are well above the snow line, and my wife is wearing a pair of Paris slippers! The peaks glitter white in the sunlight with vast masses of snow, here and there a glacier, and the rest dark expanses of windswept rock. Even if we did suc-

ceed in making a safe landing on the ice, where should we be? These are the well-nigh inaccessible heights where veteran mountain-climbers risk their necks to satisfy their craving for conquest. Occasionally we see black dots which we think are climbers roped together — or are they chamois? A group of Germans recently formed an Alpine Air Patrol, so that they could make the rounds of these mountains, keeping a sharp lookout for climbers who are in trouble. People sometimes starve in these glacial wastes. But whenever the patrolling machines find adventurers in distress, they toss down supplies and then drop a report in the central square of the nearest valley town. This has happened several times, and on another less tragic occasion a Luft Hansa monoplane dropped a hundred bottles of beer, by parachute, to quench the thirst of scientists marooned at an Alpine observatory. So we are comforted. We know that, if we find ourselves unexpectedly tobogganing down a slippery glacier in our summer clothes, winged rescuers will drop us a sandwich and a cold bottle or two and then spread the news among the goatlike guides in the valleys below.

The highest altitude we reach during all our aërial wanderings over Europe is attained as we trek through this stretch of sky between Zurich and Innsbruck. Here we are up to fifteen thousand feet! And neither of us feels much more

light-headed than usual. Of course we are only a thousand feet or so above the top of Pike's Peak. I suppose Mount Everest explorers would call this just a step above sea-level! It's a bit chilly outside the cabin. But who cares? Shortly after leaving Zurich, we turned on the heat by pressing a little lever on the wall in front of us. The heating arrangement in this Swiss-owned German monoplane utilizes the exhaust gases from the motor. So we are snug and comfortable. Of course the air is a lot rarer than at sea-level, but we hardly notice it. It is only when you move around and exert yourself that the lack of oxygen at moderately high altitudes bothers you. You feel it aboard a train and still more so if you are climbing on foot. This high flying of ours is all very thrilling, but what would it be like if we could soar up into the stratosphere?

Exploring into the upper reaches of the atmosphere is a thing much too strenuous for amateur fliers. The early balloonists were venturesome fellows, and often tried it, usually with sad results. The first important altitude flight seems to have taken place on the 15th of April, 1875. Gaston Tissandier and two companions, de Sive and Groce Spinelli, ascended from Paris in the spherical balloon Zenith and attained a height of twenty-eight thousand feet, thirteen thousand feet higher than where we are now! Tissandier survived the trip. His two companions died in

the air, and he himself was left unconscious. The cold and the exhaustion of oxygen in high altitudes had done their work.

Modern altitude fliers equip themselves with all the devices that science can give them, but they, too, have desperate times of it. Take the case of my friend, Major Schroeder, of the United States Army, who was a pioneer of high flight. I know of no adventure tale more exciting than the story of his last altitude climb.

Major Rudolph Schroeder, 'Shorty' for short, took off from McCook Field one day and started up to see if he could hit the ceiling, or at any rate the point beyond which his plane would not rise. Each plane has a ceiling of its own. Up and up it goes until finally it comes to a point above which the air is so light that it will no longer supply the engine, even with throttle wide open. Shorty thought the ceiling for his plane was about forty thousand feet, so eight miles straight up was to be his day's goal. But he didn't quite make it. At 36,020 feet, or a few hundred feet short of seven miles straight up, after shattering all existing altitude records, things went wrong and Shorty fell six miles! As you might surmise it was one wild ride!

Upon getting up to eighteen thousand feet, Shorty began to use the emergency oxygen — they call it 'smoking.' The atmosphere was too thin to sustain human life, so he slipped the

oxygen tube into his mouth — a tube that connects with tanks of life-giving gas.

His motor was equipped with a special device for compressing the rarefied air and maintaining a proper mixture in the carburetor. At thirty thousand feet he was well in the zone of the eternal trade wind which blows with cyclonic force from west to east. His machine had a ground speed of a hundred and twenty miles an hour and a still greater speed in the tenuous air of the upper heights. The gale, away up there at thirty thousand feet, was bowling along at two hundred miles an hour. The temperature dropped to sixty-seven degrees below zero. His little ship became coated with ice. Shorty wore heavy clothing, specially heated by electricity. The moisture froze on his goggles, froze so thick that he could not see. He took them off. He had two oxygen tanks. The one he was using began to give him trouble. He used the other. At 36,020 feet he began to gasp. The tank was empty. He turned to the first tank. It would not work at all now. His mind turned dark and blank. Panting for the oxygen which the thin atmosphere would not provide him, he lapsed into unconsciousness.

People of the Ohio countryside that day thought they saw a new astronomical phenomenon. A black dot appeared in the sky, falling with tremendous velocity, leaving behind it a

faint trail of smoke. It was Shorty Schroeder's plane hurtling down from the ceiling. In the cockpit lay a limp pilot, like a dead man. The trail of smoke was caused by the frozen fumes from the exhaust gas of the motor, fumes that were now vaporizing as the air grew warmer with the plunging descent.

Shorty catapulted six miles toward the earth in two minutes! It seemed as though not even a grease spot would be left when the machine hit the ground. But at two thousand feet he came to, revived by the rush of denser air. Even so he was little better off than when he lay unconscious. His senses were dim and he could see only vaguely. His eyeballs were frozen — frozen wide open. But his flying instinct was with him still. He dragged at the joy-stick and the machine straightened out. His head cleared a little more now, but still it was from scarcely more than a mechanism of habit that he pulled the plane over toward the aviation field and landed safely.

There has been quite a thrilling race for altitude records, and now both French and American pilots have soared beyond forty thousand feet. These altitude flights are not mere matters of record-making. There are various scientific phenomena to be studied in the upper sky. It has long been known that a constant and tremendous wind blows at great heights. The altitude fliers have verified and given clearer ideas

THAT BEAUTIFUL CASTLE OFF TO THE LEFT TELLS US THAT WE ARE FLYING OVER THE IDYLLIC PRINCIPALITY OF LIECHTENSTEIN

SPEEDING ACROSS THE PEAKS OF THE TYROL AT A HUNDRED MILES AN HOUR

of that remote trade wind of the upper air. It blows eternally from west to east and with great velocity. Then there is the mysterious stratosphere. Captive balloons sent up to levels around thirty thousand feet have indicated that, while in general it grows colder as you ascend through the earth's atmosphere, there is a point beyond which it not only no longer grows colder, but in fact becomes warmer! The altitude fliers have penetrated far into this region beyond the maximum of atmospheric cold and have made studies of the mysterious stratosphere. Does it continue to grow warmer until outer space is reached? There are hosts of fascinating questions to be answered by fliers who shall rise to ten or fifteen miles. But these explorers of the heights will probably have to use something more advanced than an aeroplane. Winged machines seem to have reached about their maximum elevation. Fifty thousand feet, or possibly sixty thousand, may be the ceiling for all of them, beyond which the air becomes so thin that it will no longer support man and his machine.

Page Jules Verne and his imaginative marvels!

And yet the flying men have reached the point where Verne's great rocket which, fired from a tremendous gun, carrying voyagers to the moon, sounds more reasonable. Some modern Jules Verne ought to get Verne's club of interesting gunnery experts at Charleston, South Carolina,

into action once more and induce them to take up where the altitude fliers have left off.

Then from the stratosphere to outer space and the moon, and after that some bold imaginative inventor, more ingenious than Verne, will carry us beyond the mere limits of our terrestrial satellite. Perhaps some kind of advanced flying-machine will take us to the planets, to the sun, and even for a spin around the saucer-like rings of Saturn. But that is only a tiny hop. There are stars beyond, some quite near, only a few billion miles away! Our celestial aviators will visit them first, then on to the farthest nebulæ and a cruise along the Milky Way. Let's go! Let the cosmos be our limit!

But what's this? We awaken. Where are we? In a mere airplane flying a mere ten thousand feet above sea-level, jumping across the puny Alps. We are past the Swiss ranges now and Austria lies ahead. That beautiful castle away off there tells us that we are flying over Liechtenstein, until recently one of the ideal principalities of Europe. They still don't pay taxes! Happy folk! This little country has been an independent nation for centuries, presided over by its duke. The Liechtenstein family is one of the wealthiest of Austria. The revenues from its great estates have long sufficed to maintain the government. But of late the Liechtensteins, like most of the other magnates of the Germanic

countries, have felt the sting of post-war hard times. One of the recent sensational affairs in London touched upon this happy little country of Liechtenstein. The present duke has an English wife. She was the beautiful Sheila Brunner. Her father was Sir John Brunner, prominent industrially and politically in England. London was shocked one day to learn that Sir John had killed his wife and himself. Lady Brunner was a talented and capable woman. She had written books and had a voice, and was utterly devoted to her husband. She had given her life to helping him, had interested herself in his business affairs. He had rather resented this 'interfering,' but for years had said little about it. Finally a reverse came, and he was removed from the directorate of the great chemical concern of which he had been the head. He felt it bitterly. Lady Brunner felt it more bitterly still. In her distraction she went to the newspapers, protesting and telling the story. That was the kind of thing to sting Sir John's pride. Then she did the final thing. He was bitterly anti-socialistic, had recently left the Liberal Party and joined the Tories as a protest against socialism, which change had attracted wide notice. Lady Brunner laid her complaint before the editor of the socialistic labor paper, the 'Daily Herald.' When the husband learned it, he was infuriated. A bitter quarrel between the long-devoted couple, and then tragedy.

We are flying over some of the loftiest peaks of the Austrian Tyrol now, the ice-capped mountains back of the celebrated Tyrolean capital city. Far, far below are a score of steep and narrow vales down which march those irresistible processions of ice. If our pilot cared to cut off the motor for a few minutes and spiral down into the depths of an abyss, we might even be able to hear the growling of these monsters as they grind their way between the walls of rock.

But if you care to see a lot of glaciers, more than you could ever see afoot or by train if you wandered about Switzerland and the Tyrol for a whole year, you must climb aboard an airplane. From up here the glaciers appear so numerous that we give up all hope of counting.

Long ago, in Alaska and Yukon Territory, I often heard it said that not only was there more ice radiating from the slopes of Mount Saint Elias than there is in Switzerland, but that the glaciers flowing toward the Pacific Ocean from Saint Elias actually cover an area greater than all Switzerland. If you don't think that means a lot of ice, just fly from Zurich to Innsbruck!

These wild mountain ranges over which we fly from Zurich to Innsbruck remind us of similar scenes among the mountains of Alaska, on the Continental Divide in the Colorado Rockies, from Gul Marg high up above the Vale of Kashmir, and of the lofty Himalayas from the jungle-

clad heights of Sikkim. Only this is even grander, because, instead of standing in one spot while your soul drinks in the beauty of a single view, here from the cabin of our great monoplane we get a different sublime panorama every minute as we fly over one mountain range after another.

These Tyrolean Alpine heights look much like the summits of the Italian Alps where Chase and I spent a part of one winter with the red-bearded, blue-eyed Alpini troops during the World War. These men wore white suits over their uniforms and advanced over the snow-fields against the Austrians on skis. We were high up on a lofty plateau called the Adamelo, at an altitude of from twelve thousand to thirteen thousand feet. The huts where we lived were made out of wood with an outer wall formed of great cakes of ice, much the same as your Eskimo igloo.

When the sun shone up there amid the winter snows of the Italian Alps, it was delightful, and we had a glorious time coasting down the mountain slopes across the valley from the Austrian mountain guns that kept up their ineffective bombardment. Then when it turned cold, and when a blizzard came, we huddled around the stoves and spun yarns. But, as I recall it, the most interesting thing about the Alpine warfare was the way the regiments of soldiers and the tons of supplies were transported across the dizzy chasms from one mountain-top to another.

It was all done by a vast system of aërial tramways. We rode across yawning valleys in little open baskets, just like those used for bringing silver ore down to the smelters from the mines high up in the Cordilleras of Bolivia and Peru. There was just room enough for two of us to huddle down in a basket. Then an Italian, probably one who spoke English with a Bowery accent, would shove us off. Away we would go, swinging along the cableway of the *teleferica*, until the little hoist on the opposite rock wall pulls us into a shed, where we tumble out and continue the climb on foot.

Until the World War these aërial cableways were unknown in the high Alps. They were introduced by Italian mining engineers from South Africa, and by 1917 there were many miles of them, and a whole army was swung from peak to peak in the *teleferica* baskets and countless trainloads of food pulled across the canyons. I made one trip by aërial cableway, a 'flight' I shall never forget. Right when I was above the middle of the gorge, with two thousand feet or so of nothingness under me, the basket stopped. There I hung, suspended above a glacier, for about a half-hour while Italian mechanics repaired their creaking electric hoist. It was just after sunset and there was an icy wind racing down the valley. Not only was it bitter cold, but the wind kept that basket swinging and teetering until I

thought every minute that I should be dumped out with no parachute to break my drop. During those thirty minutes, that seemed like thirty days, I had time to do a lot of thinking, and not all of my thoughts nor the remarks that were wafted down the valley by the winds off the ice-capped peaks could be printed even in this age when the censors will stand for plays and books of the 'What Price Glory' variety!

It also reminded me of a day several years previous when I crossed the Grand Canyon of the Colorado from the Arizona to the Utah side, via an old rusty cableway that had been put there by the Mormons in the early days. The Mormons had crossed it with a cage and trolley. But the cage lay smashed on the Utah side of the raging Colorado. The cable was so rusted that many of the strands were broken, but a cowpuncher named Carl Hartman, whom I had picked up as my companion on a mountain lion hunt, ventured over the cableway with me. We made a little sling out of a piece of rope and pulled ourselves across hand over hand. Coming back, I left Carl in Utah, made the jaunt alone, and managed to get lost in the Grand Canyon for several days.

But here we are looking down on a little city in a picturesque valley through which a river flows. Yes, it's Innsbruck all right, Innsbruck the capital of the renowned Tyrolean Alps. And it is even more beautiful than the exquisite colored

view I once saw on the screen at Carnegie Hall when I heard Burton Holmes intone the story of his travels in the Tyrol. The river, of course, is the Inn, which Mr. Burton Holmes told us 'is cradled by the lakes, suckled by the glaciers, strengthened by the rain-laden winds of its Alpine birthland, and sent on its way down the long Swiss valley to give a name to the city of Innsbruck, and to mingle its waters with those of the Danube and ultimately find its Nirvana in the Black Sea.'

As to the beauty and grandeur of the region, we can say that it is beyond description, and were it not for the stiff Alpine wind that is hurling us from one side of the Inn Valley to the other as we spiral toward the aerodrome, we too might be tempted to follow the example of Mr. Burton Holmes by bursting into sonorous prose poetry. But here we are with the Inn River rushing right up to meet us at an appalling rate. Now we are side-slipping toward a herd of Tyrolean cows. Ah, he has flattened out, and now we are bumping over the grass toward a hangar and a group of gentlemen wearing those comic Tyrol hats with feathers in them. We have enjoyed this flight across the Alps so much that we could even yodel a bit ourselves.

Here we change planes. While our Junkers monoplane is put to bed in its hangar at the base of these rugged limestone mountains, we ride

HERE WE ARE WITH THE INN RIVER RUSHING RIGHT UP TO MEET US

WE HAVE ENJOYED THIS FLIGHT ACROSS THE ALPS SO MUCH THAT WE COULD EVEN YODEL A BIT OURSELVES

into the city for lunch. Then we board the afternoon aërial ferry that is to whisk us down the valley of the Inn and across South Bavaria to Munich on the banks of the Isar. A few minutes after taking off, we look down on the toy-like Tyrolean villages from nearly two miles in the air. But not satisfied with this, our smiling German pilot keeps climbing until we are nearly as high as the tiptop of the Jungfrau or the Matterhorn. Just think of it! A half-hour ago we were having a mid-forenoon breakfast down there in the spacious dining-room of the Tyrolhof. Now, without troubling about spiked boots, alpenstocks, dark glasses, and grease on our cheeks to protect them from being burned by the ultraviolet rays, and without struggling up cliffs roped to a couple of Swiss guides, here we are sitting in easy armchairs looking *down* on the Alps instead of *up* at them.

We took off from the left bank of the Inn at eleven-fifty, and now at seven minutes past noon we are leaving the valley just this side of the little summer resort of Brixlegg with its crumbling château. We are cutting right across the main range of the Alps that separates this part of the Tyrol from Germany. The international boundary is up here on the crest of the range. This Fokker has only one motor, but from away up here the pilot could glide for many miles with his motor off and no doubt drop into a suitable

field. Before long giant Pullman planes will be in use on these skyways. They will be powered by so many different motors that, if anything goes wrong with one or even two engines, the plane will fly right on, and repairs will be made in mid-air by expert mechanics moving from motor to motor along a cat-walk. Even now many multi-engined planes are being put into service on the more important air routes.

Straight ahead and several thousand feet below us is a vast rolling cloud continent, with here and there a rift through which we catch glimpses of the Bavarian plain. On either side and right under our feet are the jagged, rocky, half-snow-covered mountain-peaks. Behind us is the enchanting vale of the River Inn. It all looks like fairyland.

We are across the main range now at twelve-ten, with two deep indigo-blue lakes on either side of us, Tegern See and Schlier See. Five minutes more and we are far out over the clouds. They are breaking up, and what a wild sight it is to see them pulling apart and revealing the forests and fields and villages of Bavaria under them! On each flight we see some spectacle that seems to excel anything our eyes have ever beheld. But I believe this sea of broken clouds, with the Alps just behind us, caps them all. What a chance for a series of glorious aërial photos! But I've shot my last plate! Such is life.

Twelve-twenty-two. Flying above vast forests now. Here we go diving through the clouds. For an instant everything is white, as though we might be enveloped in steam. Then we burst out into bright sunlight, and there right ahead is Munich and the glistening Isar.

At twelve-thirty we glide toward one of the largest aerodromes we have ever seen. In exactly forty minutes we have flown across the mountains from Innsbruck, where it takes four hours to do the hundred-mile trip by train. But, what is far more to the point, we saw more wonderful scenery and had more thrills as we winged our way through the skies to-day than a train traveler would encounter in a month's trip through Switzerland and the Tyrol. I recommend both. But if it must be one or the other, then as the profane, hundred-year-old cockatoo with the broken, featherless wings out in Australia, in the Sydney Zoo croaked as he flapped helplessly, 'I'll fly, by ——, I'll fly!'

CHAPTER XII

JUMPING MERIDIANS ALONG THE DANUBE

MUNICH is the most delightful city in all Germany. With its music, its art, and one must not forget its beer, it is difficult to leave even if Vienna is your next stop. It is a city with an infectious spirit, and a quality that the German-speaking peoples call '*gemütlichkeit.*' For sheer joy of living it ranks with Paris, Vienna, and Dresden. But the first time I came here I was only too anxious to leave. That was in the days when Kurt Eisner, the little red-headed Jew, and his communist followers had seized the city. There was no opera then. The famous museums and art galleries were closed. There was very little food and even the famous Münchener beer was almost undrinkable. The people were despondent.

Waldron and I happened to be in Munich during Christmas week. With red flags flying from their public buildings, with machine guns crackling from the roof-tops, with nothing but potatoes and roots from which to bake bread, with your coffee brewed from some mysterious bitter substitute and not even flavored by the bean that made Java and Mocha famous, with your tobacco blended of tree leaves and shavings, and even

with your suit of clothes, shirt, collar, and tie manufactured out of paper instead of cloth, is it any wonder that there was no spirit of Christmas in the air? Germany is a land of Christmas trees and of children's toys, but there were almost none to be seen in Munich during the holiday season back in 1919.

Like nearly every other flying-field in Europe, the one at Munich is several miles outside of the city. It is a glorious level stretch of green turf, but the little buildings, scarcely more than shacks, on the edge of it are evidence of the fact that commercial aviation is still in its pioneer stage. The time will come when flying-fields will be furnished with substantial structures, as railroad stations are now. The German air lines have all united to form one vast organization called the 'Luft Hansa,' the word 'Luft' meaning air, and 'Hansa' being a synonym for league. It is indeed an appropriate name, and may help to remind the world, for many more centuries to come, of that mighty union of merchant cities, most of them German, that once united to form the Hanseatic League. Here in the south the vast German air union is called 'Suddeutsche Luft Hansa.' While we are sitting in the little flying-field restaurant in company with a dozen other pilots and passengers, the two managers of this southern German air organization come in and join us. One is the youthful, polished, and exceedingly charming

son of Major Martin Wrunsky, a director of the parent organization in Berlin. The other is the present national hero of Bavaria, Count Arco Valley, who became famous shortly after the War, when he drew his revolver one day and killed Kurt Eisner, the communist head of the Reds.

In our aërial jump across five meridians from Munich to Vienna, we fly due east for three hundred and forty-seven kilometers. Both cities are on exactly the same latitude. Although we cross one of the lower ranges of the Bavarian Alps, we see very little of the mountains because of the mist. Occasionally we catch a glimpse of a castle or château, but it appears and disappears like a phantom. On this hop we draw exactly the same kind of weather the American Army Air Service world fliers had when they passed this way, flying in a direction opposite from ours, on their flight around the globe. Lieutenant Leigh Wade, pilot of the Boston, told me that they considered their jaunt from Austria to Germany a hazardous one because the rain and fog drove them down to within less than a hundred feet of the ground. Several times they had to 'kick rudder' and bank sharply to avoid crashing into the turret of a castle or the trees on the summit of some hill.

Upon arriving in Vienna, a bus ferries us from the flying-field to the Hotel Bristol. We are not thinking of the round-the-world fliers when we

step up to the desk to register, but the clerk immediately recognizes our nationality and tells us that we are to occupy the same suite that the crew of the Chicago, Lieutenant Lowell Smith and Lieutenant Leslie Arnold, had when they passed through Vienna. I recall what Arnold told me about their breakfast at the Bristol:

'It was almost worth flying around the world to get that delicious bowl of raspberries and cream the waiter brought to us. But you should have seen the bill! It was for three million, seven hundred and fifty thousand kronen! Why, at prewar rates our plate of toast would have cost us about fifteen thousand dollars.'

After the departure of the world fliers the Austrians succeeded in stabilizing their currency pretty thoroughly. They put it on a gold basis and our breakfast bill in Austrian gold marks, sixty-five cents, to be precise, represents far more actual money than all those millions of kronen.

We made the flight to Vienna in a single-engined, all-metal German monoplane, one of the Junkers variety. But from Vienna on we travel once more by the French C.I.N.A. (*Compagnie Internationale de Navigation Aérienne*). Our plane this time is a white Spad, just like the one in which we hopped from Paris to Strasbourg. But our pilot is a handsome young Austrian, a veteran of the World War. While the rigger is busy piling

the mail bags and boxes of freight in the front of the cabin, we get acquainted with the aviator and discover that he was the chauffeur of one of those same bombers that used to drop 'eggs' just outside our hotel window at Padua when Chase and I were with the Italian army at the time of the first battle of the Piave. I wonder if he was the pilot of the plane that laid the egg on the home of the Italian soldier who gave me an interesting pocket-book. That pocket-book had saved his life by checking the flight of a jagged fragment of steel.

Sharp at eleven A.M. our Austrian pilot 'gives her the gun,' and we are on our way to Budapest. In less than five minutes we have climbed to an altitude of two thousand feet. The plain is dotted with villages, most of them of the long straggly kind, with only one street, built on either side of a great highway. Every roof-top is white, for winter still holds Austria in its grip. From up here just under the billowy clouds, we can see into three countries. Directly under us is Austria, to the left across the Danube is Czecho-Slovakia, and up ahead stretches the vast Hungarian plain, one of the granaries of the world. It is a cold gray day. Along the horizon both to the left and to the right are mountains. Six minutes out from Vienna we cross the Danube. From up here in the heavens the water is of a greenish-blue hue. Although on our way from Munich to Vienna we

OUR AUSTRIAN PILOT READY TO GIVE HER THE GUN FOR OUR TAKE-OFF FROM VIENNA TO BUDAPEST. MY WIFE RIDES IN THE COCKPIT WHILE THE SWISS CHEESE AND I OCCUPY THE CABIN

A GERMAN SKY PILOT WIGWAGS 'HELLO' TO US AS WE PASS EACH OTHER ABOVE THE PLAINS OF HUNGARY

crossed and recrossed the Danube several times, it was so completely hidden by the mist that we saw nothing of it, but now, on our trip from Vienna to Budapest, the blue Danube is in sight nearly the whole way. Fifteen miles or so to the south of us is a big lake that appears on our strip flying-map as the Neusiedler See. The shores of this lake used to be a favorite rendezvous for hunters in the gay pre-war days of Franz-Joseph. It is a body of salt water about twenty-two miles long and very shallow. The southern end degenerates into a swamp and the forests along that shore abound with game.

This level plain over which we are flying looks rich from up here in the sky, and of course it does contain some of the finest farm land in all Europe. We are nearing the mountain range to the left of the Danube. Below us on the right are three quite large towns and in the river are lovely wooded islands.

Eleven-twelve A.M. We are nearly a mile above the plain now. Occasionally fluffy clouds pass beneath us. It seems as though we are suspended in mid-air and that they are flying past at great speed. A big city appears far below on our port side, the city of Bratislava, Pozony, or Pressburg. For the present the first name is the official one, because at the Peace Conference the town was given to the new country of Czecho-Slovakia. The Germans and Austrians call it Pressburg,

while to the Hungarians it can never be anything but Pozony because it was once the capital of Hungary. It is picturesquely situated above the Danube on cliffs nearly three hundred feet high that remind us of the Palisades along the Hudson. Around part of it is a massive old wall which adds to its charm, when seen from an airplane. Those mountains behind it are the Little Carpathians.

There is one thing that has puzzled me in all the time that we have been flying, and that is why we see so few birds. Of course they are still in the sky, but evidently they stay much nearer the earth than I had suspected. Ships at sea are almost invariably escorted by flocks of gulls. Day after day these masters of the air follow an ocean liner, and it is amazing to see how perfectly they control themselves even in the teeth of a gale. Often they appear to be motionless when they are really flying with great speed. But our airplane flies alone. There are no birds up here with us. Several weeks ago, however, a French Spad was winging its way from Paris to Strasbourg across the Vosges. Right over the mountains the pilot saw an object diving straight toward him from the opposite direction. For a moment he thought it was another plane and was afraid lest there be a head-on collision. But when it drew a little nearer, he saw that it was a huge bird, probably an eagle. The two passed within a few yards of each other.

Sir Ross Smith, the great Australian airman, had a rather thrilling experience with a hawk one day when he was taking off from an aerodrome out in India. Sir Ross was the airman who brought down the last German plane that crashed during the Palestine campaign, and he flew many a time with the famous Colonel T. E. Lawrence for a passenger. I knew him when he was a star performer with the First Australian Squadron south of the ancient seaport of Jaffa. After the World War the Australian Government offered a prize of ten thousand pounds to the first Australians who should fly home from London to Australia and take no more than thirty days to do it. Captain Ross Smith and his brother Lieutenant Keith Smith entered the race with a twin-engined Vickers-Vimy, a standard bomber identical to the one in which Sir John Alcock and Sir Arthur Whitten Brown made the first non-stop flight across the Atlantic. The two Smiths accomplished the long journey halfway around the world in exactly twenty-seven days and twenty-seven hours. That was back in 1920. My wife and I happened to be in Australia at the time, and Sir Ross related the story of his adventures to me. They had flown as far as Calcutta and were ready to leave for Rangoon.

'We had come down on the race-track,' said Sir Ross. 'The space was really too small for a take-off in our big Vimy. Huge crowds of Hindus,

Mohammedans, and Europeans were jammed around the outer rail of the race-course and I was very anxious not to have an accident, for fear we might injure some of the spectators. However, we managed to get off the ground all right, but just as the wheels touched the grass for the last time a number of big hawks came swooping toward us. One of them, apparently bewildered, crashed straight into the propeller of our port engine. There was a whirring and crashing for a moment and I was afraid the "prop" would fly to bits. In trying to swing out of the way of the rest of the hawks, I nearly cut off the top of a tree. But once we had ascended to about a quarter of a mile above the city, we were no longer bothered by them. This was one of the closest calls we had on our entire ten-thousand-mile flight. Usually a propeller will fly to pieces if the slightest thing hits it when it is revolving at top speed. If that had happened we probably should have crashed right into the crowd.'

Fortunately nearly all propellers are made of metal nowadays and the danger is not so great.

After you have flown a few times yourself, you take a greater interest than ever before in the flight of birds. Although airplanes climb to far dizzier altitudes than any bird ever reaches, our feathered friends probably still hold the record for long-distance non-stop flights. What an astounding thing it is that little objects half the

size of your closed fist can fly for hundreds and even thousands of miles, through storms, without coming down for food, and with no landmarks to guide them!

Naturalists are still uncertain as to how high birds fly. But it is said that cranes have been observed in flight across the sun's disk nearly six miles above the earth, almost as high as 'Shorty' Schroeder, Macready, Sadi Leconte, and Champion have ascended on their high-altitude flights. Swans, geese, and ducks often fly a half-mile above sea-level, and no doubt eagles, vultures, and condors go far higher, since their feathers are thick enough to help keep them warm and their bodies large enough to generate enough heat to overcome the cold of the high altitudes.

The much-coveted city of Bratislava-Pozony-Pressburg, which the wise men at the Peace Conference handed over to the Czechs, is almost out of sight, far astern. Beneath our wings now are hundreds of streams and pools of water, a poor parking-place for a plane that is neither a flying boat nor an amphibian.

We have crossed the frontier between Austria and Hungary and are still bolting through the blue nearly a mile above the black-loam fields. A few minutes ago, when we were looking down on Bratislava, my feet were merely cold. Now they

are darn cold! That metal German plane in which we crossed the Bavarian Alps from Munich to Vienna had a heater in the cabin, an affair connected with the exhaust stacks. This Spad has none. The French do far less for the comfort of passengers, on this international air route between Paris and Constantinople, than the Germans on their Central European skyways. Not many passengers fly over this line as yet. It is more of a political gesture to keep France in the minds of other countries than anything else. Of course the comforts will all come in a short time, but we are ahead of them.

The circulars and advertising matter published by the various airways tell passengers that it is not necessary to wear anything but ordinary street clothes, the same as when you travel by rail. But if you happen to do any flying in early spring or late fall, or during the winter, you will never regret it if you wear a pair, or even two pairs, of heavy-weight woolen stockings.

One of the most noticeable things about the landscape over which we are hurtling is the lack of isolated farmhouses. The peasants all live in little villages. I suppose this custom dates back to the days when it was necessary for purposes of protection. Then there is a curious shape to nearly all of the fields. Instead of being square or nearly so, the most of them are long and narrow. I wonder why? Perhaps this is a way the

farmers have of saving time. At any rate, a man ploughing is not obliged to swing his oxen and plough around so many times.

Eleven-twenty-five. Here we are following the Danube again, with its hundreds of sand-bars and islands. These peasants are not very resourceful when it comes to architectural designs. Every village looks like every other one, and the houses are as much alike as those run up in a cheap American suburban subdivision. There is but one church to each village. Evidently the peasants of Hungary are satisfied with things as they are and not so prone to break up into innumerable denominations as in England and America. The main channel of the Danube is near us on the left, while to the right, five or six miles away, is a second channel almost as large. So we are flying over an island right here in the midst of the plain, an island that is fully thirty miles long. I wonder if there is in the world any larger island formed by a river? If we were crossing the Hungarian plain by train or automobile, we should never see this phenomenon. Kipling was right when he prophesied that the advent of the airplane would bring to the traveler a totally different conception of the planet on which he lives. By flying over countries you get an impression of them as a whole, and then, when you descend at an aerodrome and remain for a few days or a few hours on terra firma, you get

your more intimate pictures. I should think it would be marvelous to fly over this vast plain in August when it is a mass of golden grain and when the peasants are harvesting.

Eleven-forty. There is the first steamer that we have seen in all the time that we have been following the Danube. It is towing three huge flat barges. That steamer and those barges look exactly like the ones you would see if you flew down the valley of the mighty Yukon, in far-off Alaska, in the rear cockpit of the plane that now carries the mails from Fairbanks to the city of Nome away out on Bering Sea. Airplanes in Alaska? Surely the old order is passing. Even in the remote North the Husky and Malemute dogs are being supplanted by the flying-machine that brings far-distant Arctic points within a few hours of civilization.

All of the commercial air lines of Europe supply their passengers with narrow strip maps. At one end is the city where you start your flight and at the other your destination. The strip includes an area about thirty miles wide, down the middle of which runs a red line, the theoretical route your plane is supposed to take. But of course the airplane is not obliged to stick to any particular route, and it is safe to say that the Spads flying between Vienna and Budapest never pass along the same skyway twice in a year. According to our map we are supposed to be above the left

bank of the Danube at present, but in reality we are several miles to the right of it.

At eleven-fifty-seven we look down on a small city at the junction of two rivers, the Danube and the Neutra, or the Waag as another map gives it. I guess both names are correct, because several miles to the north of us we can see the junction of two rivers, which, forming one, flow into the Danube. One of these is the Waag and the other the Neutra. The city beneath us is the most heavily fortified we have seen so far on our way to the Golden Horn. Five great forts guard the approaches of the city from the west. There are really two large towns here instead of one, Komarom on the north bank and Szony on the south. In days gone by the twin cities withstood more than one great siege.

Just at noon we leave the Danube, which swings off to the left and continues its way to Budapest in a wide sweeping curve. We are still a mile above the plain. My wife is becoming so *blasée* at this ultra-modern way of traveling that instead of seeing Hungary through her own eyes she is seeing it through the Irish spectacles of George Birmingham, the novelist and clergyman, whose 'A Wayfarer in Hungary' she finds more interesting. Here we are above a little city situated on the edge of a small lake. Tata is the name of the place, famous for its stalactite caverns, marble quarries, and slate pits. We cross over

mountains and forests for a change and then over a vast factory of some sort, with rows and rows of mysterious-looking buildings, probably where the people live who work in the coal mines. Several more towns and lakes appear and disappear far beneath us, and at twelve-twenty we see the Danube once more, ten miles or so ahead. This means we are nearing the twin cities of Buda and Pest.

My wife has just leaned over and looked through the little glass window into the pilot's cockpit, and then she makes signs with her hands to call my attention to the fact that the altimeter now registers only a thousand meters. Our plane takes us right over the heart of old Buda and then across the more modern city of Pest. There is no doubt but that the best way to see a city for the first time is from the window of an airplane. Instead of coming in through a lot of dirty railway yards and uninteresting factory and poorer residential sections, you get a perfect panoramic view, a view that once and for all puts a plan of the city in your mind's eye. Then, too, some cities are marvelous spectacles from the sky. Among the finest sights of all is the great capital of Hungary. We pass right over the ancient citadel high up on the west bank of the river. On our left are the mosques, cathedrals, and vast rambling palaces of old Buda. Then we look down on the river with its world-famous bridges,

the parliament buildings of Pest, the row of great hotels that line Franz-Josef Quai, and then on over the heart of this modern Danubian metropolis which is the true meeting-place between the Orient and Occident. Budapest was in the power of the Turks when those invaders overran southeastern Europe and marched up the Danube. We see evidences of the Turks in the Mohammedan style of architecture here and there on the skyline of Budapest. In fact an aërial photograph of this city looks much like one of Constantinople.

Twelve-forty. Bang! Either the flying-field is unusually rough or our veteran Austrian war pilot is having an off day. We hit the ground with our wheels all right enough, but it was a terrific bump, and, instead of running along over the ground until our Spad lost flying speed, we tipped up and dug our nose into the earth. The propeller was smashed to pieces. One wheel crumpled up and the axle broke. When she nosed forward there was considerable confusion in our cabin. In addition to my wife and myself there was a Spanish gentleman from the Argentine. The force of the jolt and the tipping-up of the plane threw him heavily against the front wall of the cabin and hurled my wife on top of him.

'*Mon Dieu!*' said the traveler from Buenos Aires. And he expressed our sentiments exactly.

CHAPTER XIII

A FLYING BABY AND AN AËRIAL CURE FOR INSOMNIA

If we were in a hurry we could climb right into another Spad, make Belgrade in time for tea, then skim over the plains of Yugo-Slavia and hop the Transylvanian Alps in time for a late dinner in Bucharest. Much as we like speed, we are not in quite such a mad rush as all that.

But if you ever are compelled to get from Paris to Constantinople without making any long stop-overs on the way, you can fly the eighteen hundred-odd miles in less than twenty hours, and if you sit out in the cockpit beside the pilot half the time you may get there feeling fitter than when you started. By train the same journey would take from three to four days, possibly longer.

However, Budapest is one of the cities of Europe that we have never visited, so we decide to spend the night before going on to Yugo-Slavia and Rumania, and then stop off for a week or so on our way back.

On our way in from the aerodrome two of the first familiar sights that greet us are a Chrysler car and a Charlie Chaplin poster. Even the police are resplendent in glistening helmets that remind us of New York firemen. When we pull

up in front of the hotel, a bronze plate announces that our caravanserai boasts of having an 'American Bar,' indications that many American missionaries have preceded us. Budapest is a massive city of wide streets, vast palaces, women shrouded in huge shawls, and men wearing baggy trousers, Astrakhan tarbooshes, and fierce mustaches. There is something Central Asian about Budapest and we can tell that we are approaching the Orient.

On the writing-desk in our spacious room at the Gallert Palace Hotel overlooking the Danube, we find a little booklet full of hints for travelers and written in quaint English:

Our purpose is to make acquainted the educated foreigner with Hungary's natural beauties, cultural monuments, and most prominents building.

Since thousand years these Hungarian race lives in the heart of Europa and is reigning in one of the finest countries of the world. This race has conquered its empire, then being both a desert wilderness and a valley of tears. To-day we may, with legitimate prides, invite the foreigner to visit same as it is now standing on the heighth of prosperity over all parts and classes of population.

In ancient times our empire would not fight only for Europe: In the XII century several universities refounded, as in Veszprém and Pozsony. King Mathias founds a library of 7000 works. In 1493 appeers the 'Budai Kronika' one of the oldest incunables of the world with which Hungary was beforehand towards the Dutch, Englisch, Spaniards, Grechs, Poles, and Austrians.

We may refer also to other proofs of ancient civilization

as plastic arts and architecture (basilies of Székesfehérvár, Györ, Eger, etc.) In the christian Hungary there rapidly increased not only architecture, but also the art of sculpture. Now new ideas move the world, and though we were beaten, we present the foreigner a culture as it was in these famous ancient times.

Ring Lardner himself could hardly have done better. At any rate, this is far more coherent than anything that we could write about America in Magyar!

When we arrive at the aerodrome to take off for Belgrade, we find that there are three other passengers going in the tiny Spad with us. One is a Rumanian business man, and the other two will occupy only one chair in the cabin — a Serbian mother and her three-months-old baby! In a few minutes we are far above the great plain again and the scenery is just the same as what we flew over yesterday, except that each peasant's home is on one corner of his own land instead of in a village.

About an hour out from Budapest we fly over the new international boundary between Hungary and Yugo-Slavia, just to the right of the city of Szeged.

The Rumanian is sound asleep with his mouth wide open. This is one time when the noise of the motor serves a useful purpose. When it comes to a choice between the buzz of some one sawing wood and the rhythmical hum of a Lorraine

motor, I vote for the latter. At the aerodrome in Vienna the other day the busy little Austrian manager of the flying-field told me that last summer they had a regular customer who flew back and forth between the Austrian and Hungarian capitals once or twice a week. He was an Austrian business man with a branch factory in Budapest who was troubled with insomnia. For some curious reason the cabin of an airplane was one of the few places where he could really sleep. He said this man dozed off the moment he was comfortably seated in the plane. Even the bumping and bounding when the ship taxied into the wind failed to arouse him. He invariably slept right through the entire journey, and was still dead to the world when the plane plumped down and came to a stop. It was necessary to shake him in order to wake him up. Several years ago I heard of a doctor in Paris who was also troubled with insomnia and who used to spend his nights riding back and forth across France in a *wagon-lit*.

The Serbian baby is asleep too and apparently unconcerned about the flight. Her mother informs us that she is going home to Belgrade by air to avoid the bumpy, dusty, all-night rail journey.

Our pilot, a Frenchman this time, told us before we took off that the weather forecast for the trip was what he termed 'second,' *comsi comsa*.

That prognostication was about correct because the sky is overcast, there is no sun, and it is fairly hazy. We have been out for an hour and a quarter now and in another forty-five minutes or so should reach Belgrade. The Rumanian just woke up, and he is writing me little notes on the margin of his Budapest newspaper. Like most educated Europeans he has an excellent command of English.

'The people who live down here on this plain are industrious and prosperous,' he writes.

'Although primitive, uneducated peasants they are getting along very well in building up their new country. They are fine fighters too.

'I like them better than those Czechs who live way off to the left of us. Although hard-working, the Czechs are unsympathetic and lack charm.

'Best of all are the Hungarians. My home used to be in Budapest, but I left there after the War when everything went to pot and Bela Kuhn started his reign of terror. The Hungarians are a broken-hearted people. They think they have lost everything. They want revenge and say they can whip any of their neighbors singly, and possibly all of them at once. But they had better work hard and forget this revenge.'

I asked the Rumanian doctor (every fairly well-educated man in this part of the world seems to be called doctor whether he is a medical man

or not) how the Bulgars were getting on. This is what he wrote in answer:

'The Bulgarians are all peasants. They have no upper class. They are most industrious, and because they are naturally a happy, well-balanced people they are flourishing despite their great loss of man-power and their loss of territory during the War.'

This conversation, carried on by means of slips of paper passed from one to the other, continued the rest of the way from Budapest to Belgrade. The doctor, something of a political student, apparently, contributed a few quite reasonable observations on the ever-troublous state of things in the Balkans. That war-breeding peninsula, he said, had been cursed by history. In the course of human migrations it had become the home of half a dozen very different and very warlike peoples, with the boundaries between them wildly confused. The long reign of the Turks had kept the country more or less at peace, but had not unified it. The Turkish policy was such that the racial lines were sharpened rather than obliterated. It needed only the removal of Turkish rule for the hornet's nest to get busy. When that removal did finally take place, the Great Powers of Europe stepped in and with their machinations made a bad situation worse. The immediate troublesome feature in the Balkans was the

matter of unsettled boundaries. The Great Powers took it upon themselves to adjust the boundaries of the States newly freed from the Turks. They played pure politics. Their attitude to the Balkan States was something like this: you tie up with me and I'll back your claims. Thus it became a matter of the Powers bickering with each other on behalf of their protégés, and the boundaries were fixed, not on any sensible basis, but on one of political bargaining among the Powers. The result was that there were many stretches of territory that still remained in dispute. The worst plague spot is Macedonia, the country of Alexander the Great. Much of it is solidly Bulgarian in population, but the Bulgars have never been able to get control of it. It has been a constant Bulgarian *irredenta*, and still is. Bulgaria went to war against Serbia and the Allies to redeem the Macedonian Bulgarians. She will go to war again in the same cause. The Peace Conference merely continued and aggravated the former bad condition. In punishing Bulgaria, it merely distorted the Balkan boundaries still further, until to-day they are more illogical than they ever were. So, according to the doctor, another war is certain to come.

We have the Danube in sight all the way from Budapest to Belgrade. Everywhere below us are hundreds of pools of water and channels cutting the plain into crazy designs.

Kipling's statement that before long the aeroplane will make people revise their conceptions of natural scenery finds here an excellent instance. Even a vast plain like this below us is a gorgeous sight when seen from an airplane two or three thousand feet above the ground. I find it impossible to describe the beauty of it. A priceless old Persian carpet is the only comparison that I can think of. Nor is there anything monotonous about the view that you get of a great plain from the sky. Instead of your seeing it as one color, as you do when you are down on the ground, it is broken up into a constantly changing pattern, with more colors than a great tapestry. Photographs taken from airplanes do not do it justice because color is its most important feature. And, whereas in an aërial snap-shot you see just one stationary space of earth, when you are flying over it the scenes change more rapidly than a panoramic motion picture. Instead of looking down on a few farms, you see thousands of them. Instead of one or two villages, towns flash beneath you so rapidly that you can hardly count them. By the time you have glanced at one river or lake, others are in sight. Far up here in the sky you get cloud effects with which only mountaineers are acquainted, and on a clear day you can see such great distances that often mountain ranges rim your horizon. Even coal mines, factories, and the most dismal scenes that you can

think of take on a magic beauty when you fly above them. Then just imagine the fun of watching the Lilliputian inhabitants and the buglike automobiles scurrying along those white lines. If scenery is a salable commodity, then from now on even the levelest stretches of Indiana, Kansas, Hungary, and Yugo-Slavia will have wonders to attract the traveler, wonders hardly less inspiring than the scenery that lures the world to the Rockies and the Alps.

Four-forty-five P.M. There, just ahead of us at a bend in the Danube, is the city of Belgrade, built on a group of hills. But we are landing on this side of the river, ten or fifteen miles out from our destination. The Belgrade aerodrome is on the edge of the smaller city of Pancevo. Once again we decide to stop over for a night instead of simply transferring to the next plain. The Serbian mother says that her tiny babe stood the trip wonderfully well, but now that it is safely on the ground it is having a mild attack of airsickness. She prefers that, however, to twelve hours in a hot train.

We are reminded that taking the baby on a short airplane jump is a more pleasant matter than keeping it quiet for hours in a hot railway coach. An aërial baby carriage seems to fit in nicely with the trend of things. In Russia they have an aërial Black Maria, which carries prisoners to the remote penal camps of Siberia. A year

or so ago, during a gold rush in northern Ontario, prospectors used planes in the 'rush' to get there. In western Canada hunters are being carted about by a flying service which scouts over the country and reports the places where game is abundant. Australian M.P.'s keep in touch with constituents in remote parts by making week-end flights home. On the United States-Canadian boundary flying-machines scout for rum-runners. At Santa Monica, California, when swimmers get into trouble far out from the beach, a plane goes out and drops life preservers. In British Guinea a private firm has a seaplane which is regularly used for carrying to hospital persons suffering with fever in the outlying rubber plantations. During the war against the Riffs the French used aero-ambulances regularly. Two pilots of the American Navy saved many lives by carrying diphtheria antitoxin to an isolated point on the North Carolina coast, where an epidemic had broken out. The United States Bureau of Entomology is experimenting with airplanes in the fight against malaria. Machines fly out and drop larvacide over regions that are the breeding-places of the malaria-carrying mosquito. A Lincolnshire potato-grower had an area planted with potatoes sprayed from the air. It took twenty-five minutes. By ordinary methods it would have taken two days. In Hawaii the air patrol that watches for forest fires dropped

seed, sowing it over a large section where a forest fire had raged. Aircraft are being used to spot water supplies, fish hatcheries, shoals of fish, whales, seals, and even mineral deposits. Wild birds have been fed by planes which scattered food in their haunts. In Australia a farmer does a big business by dispatching day-old chicks by air. In Belgium machines are regularly used in transferring homing pigeons from one point to another for release in the races. A man died in Newark, New Jersey, and directed that his ashes be scattered over a large body of water, which his son, an aviator, did by plane. Lindbergh did this same thing for his father. A workman in the United States was gassed while working beneath an automobile, and lost his speech completely. A Chicago specialist had him taken up to six thousand feet in a plane, which then dropped five thousand feet, first in a tail-spin and then in a nose-dive. The patient recovered his speech. The treatment was based on the idea that the patient was affected by blood congestion. In rarefied air the blood recedes from the surface. A swift plunge into a denser atmosphere sends it rushing back. That will tend to break down a congestion.

There is no mood of despondency and gloom here in Yugo-Slavia. Although some of the other European capitals, and great cities like Budapest, Vienna, and Leningrad have been languishing

and withering since the War, Belgrade is flourishing as never before. There is a wild, half-barbaric look about its streets. But there is something electric and vigorous in the air here. Although only a few miles apart the neighboring cities of Belgrade and Pancevo are quite different. The latter is inhabited mainly by Hungarians, with a sprinkling of Germans. It is a wealthy commercial center, too, because it is one of the principal grain ports on the Danube. Grain from the Hungarian plain passes through Pancevo and is loaded on the river boats. The market square, over whose bumpy cobblestones we drive on the way to the ferry, is crowded with jolly-faced peasant women, their faces half-hidden by their shawls, and their little stalls piled high with vegetables, fruits, and flowers. Men, many of them giants in stature, and wearing tall lambskin hats and embroidered sheepskin coats, crowd the sidewalks. Yugo-Slav soldiers and officers in khaki and red add a splash of color. Both Pancevo and Belgrade are exceedingly dirty, but quite picturesque.

We are told that this is one of the few countries in Europe where Americans are still popular. Every automobile is of American make, and Belgrade, despite its typically Balkan dirt, its bulbous-domed churches, and its rather barbaric-looking people, reminds us more of an American frontier city than any other place in Europe.

At the Excelsior in Belgrade I ran across an old friend, an Albanian aviator whom I had known in eventful days at Saloniki. He was then attached to the *entourage* of Essad Pasha, then a sort of off-again-on-again ruler of Albania. One day when he was with me I had asked Essad Pasha whether it was true, as I had heard, that he had killed forty men with his own hand in the course of his ambitions. He replied thoughtfully: 'No, not forty — only twelve.'

At the Excelsior I had a bottle of wine and a long talk with my Albanian friend. He was intelligent and cultured, a Moslem full of cynical ideas about the Christian nations. He told me a tale about a certain royal family, a romance which Boccaccio should have written.

'The king,' he said, 'is a washed-out, feeble old man whose queen twists him around her fingers. He had many mistresses in his youth, and women used to take rooms in a third-rate hotel across the street from his wing of the palace, catch his attention, and display themselves, so that he might send for them, which he often did.

'The queen was egotistical, clever, and beautiful. In her youth she was a miracle of loveliness. She had many lovers. She was past fifty now, fat, but still beautiful and going strong. Her present lover is a Prince, one of the greatest nobles of the realm.

'The Crown Prince is weak, but amiable.

Brought up in so bad an atmosphere, it is no wonder that he is dissipated. One morning he met his mother's favorite coming from her quarter of the castle.

'"Good-morning, doctor," he called.

'The noble replied testily:

'"What do you mean by calling me doctor?"

'"Any man," the Crown Prince replied, "who comes from the Queen's quarters at this hour of the morning must be either a doctor or a rogue."

'They nearly had a duel right there and have been bitter enemies ever since. And that is why the Crown Prince is now out of favor with the powers that be.

'The Queen's youngest child is said to be the daughter of the Prince, and when he comes to the palace the other daughters tease her, saying:

'"Go tell your father good-morning."

'It is, my dear Effendi, a very royal and Christian family, but, of course, a Moslem like me cannot understand.'

To which I replied that even a Christian might have his troubles understanding.

CHAPTER XIV

ACROSS THE TRANSYLVANIAN ALPS TO BUCHAREST

My wife rode outside in the cockpit beside the pilot on the way down from Budapest yesterday, and liked it so much that she is out there again to-day as we continue on along the Danube toward Rumania. Before the public will take to the air, planes will have to be made more comfortable than they now are.

Four things are essential if you are to be happy in the air: Your chair must be the last word in ease to make up for your inability to get up and stroll about; there must be heat for your feet and legs; you must have perfect vision in order to satisfy your curiosity and watch the world unroll below; and you must have plenty of fresh air.

Although we have grown quite fond of these speedy little Spads, they are certainly lacking in all four of these features. It really is far more fun to sit outside with the pilot. Although the cockpit windshield offers considerable protection, you still get enough of that hundred-miles-an-hour wind, created by the onrushing plane, to give you a feeling of exhilaration and to put as much color in your cheeks in thirty minutes as you can get

in a week of golf. Then, too, you have no cabin walls to cut off your line of vision. When it comes to a choice between riding in an airplane cabin or in a cockpit, I should choose the latter every time, even in stormy weather, for the same reason that most travelers prefer to sit out on deck instead of in the cabin of an ocean liner.

Dr. J——, the Rumanian banker, is the only other passenger with us on to-day's four-hours hop across the mysterious Transylvanian Alps. Our pilot is another Frenchman, with his face swathed in bandages. Far ahead of us is the high range of mountains over which we are to fly. A half-hour out from Belgrade we cross the Danube and start following its winding course through a bleak mountain wall. Away off to our left is a lake and right under us a small prairie fire is sweeping over the countryside.

The Rumanian doctor has already had his first aërial nap and is now busy writing me little notes as he did on the flight down from Budapest. In one of them he remarks that Rumania won a lot of territory as a result of the World War. He says it is now one of the richest countries in Europe. But he somewhat disloyally adds that the people are illiterate and lazy. When I ask him if he means the peasants by this, he says 'yes,' but that the upper classes of the cities are largely to blame because they set a bad example for the rest of the population. According to the

doctor, they are far too fond of luxuries and much too careless about their morals. In explanation of the latter he adds that many of the elderly women are what New York describes as 'cradle snatchers,'and that it is done openly. It is his opinion that this has helped to undermine the moral fiber of the masses who know all about what goes on.

We left the Pancevo flying-field at eight-fifteen this morning and now at nine-ten we are above a deep gorge that the Danube has cut through the Transylvanian Alps. We are now flying over what is said to be the most beautiful stretch of scenery anywhere along the Danube between the Black Sea and the Black Forest. The rapids under us and the narrow gorge remind us of those wonderful gorges along the upper Irrawaddy River near the Chinese frontier in Burma. It also looks somewhat like the gorges of the Yangtse, and like Miles Canyon at the head of the Yukon, only on a far grander scale.

We have ascended to just under ten thousand feet. Behind us are the plains of Yugo-Slavia, far ahead the lowlands of Rumania, and directly below us the narrowest part of the gorge, and then two cliffs called the Iron Gate. This is one of the few places in Europe where one feels a bit uneasy flying along behind a single motor. So far as I can tell there isn't a flat spot anywhere in these mountains where a plane could get down

THE WORLD IS BROKEN UP INTO A CONSTANTLY CHANGING PATTERN WITH MORE COLORS THAN A GREAT TAPESTRY

A FRENCH TRANSCONTINENTAL PASSENGER LINER OF THE AIR CROSSING THE BLEAK BALKAN MOUNTAINS

without cracking up in case of engine failure. In the American Army Air Service no pilot is supposed to take off unless he has first slipped into his parachute harness. But for some reason which I have been unable to discover, none of the passenger planes in Europe provide parachutes for passengers. One explanation, given to me by a British authority on commercial aviation, was that parachutes would frighten passengers. Still this seems a thin excuse because travelers at sea would certainly be far more frightened if told there were no life-belts aboard than they are at seeing them under their berths. Of course airplane engines have been perfected to the point where motor trouble on short flights from one city to another is almost unknown nowadays. But if you do happen to need one, just as occasionally happens while crossing the ocean, you need it awfully badly, and you need it only once. There is no doubt but that life-belts give the ocean voyager a pleasant sense of safety, although they are far less likely to save lives than are the wonderful parachutes with which all military and naval planes are now equipped. So why shouldn't a parachute give a cloud voyager a similar feeling of security? In America I have often worn a parachute harness, and it certainly made me feel a lot more comfortable to know that I could step over the side of the plane and proceed down to earth at a moderate rate of speed!

Your risk in a parachute jump is insignificant in comparison with the risk in a crash if you are in a single-engined plane that has encountered trouble while crossing over rough country like the jagged peaks and unfriendly cliffs of these Transylvanian Mountains. Parachutes have now been perfected to the point where any person can be taught how to get out of a plane in an emergency and step off into space. A few words of instruction would be sufficient. Moreover, the modern parachute is a far more efficient affair than the life-belts carried by ocean steamers. You slip into it just before you enter a plane and the 'chute itself folds up into an excellent cushion on which you sit.

The modern parachute was only brought into use by military aviators during the last year of the War, and even then only by the Germans. Many a German pilot and observer floated down to safety after having their plane shot to pieces. If they had been in use on both sides throughout the War, it is probable that hundreds of our finest fighting pilots would be alive to-day, among them Major Raoul Lufbery, who jumped from a burning Nieuport scout.

Even after the Germans had put the parachute into use the Allied authorities were undecided as to whether it would be advisable to follow their example. It was held by some that if a pilot had a 'life-belt' he would be tempted to jump and be

made a prisoner in emergencies when he might have an excellent chance to bring his disabled ship down safely behind his own lines. Of course the opposite opinion was held by the pilots themselves, but the anti-parachute school held the whole problem in abeyance until the War was over. That, it has always seemed to me, was an injustice to the fellows who were up there battling among the clouds. On the one hand, it seemed unfair to question the bravery and tenacity of those aërial knights in the face of their mad prodigies of valor day after day, and, on the other hand, it seemed absurd to deprive them of any device that might lessen the frightful hazard to which they were hourly subjected of being cremated alive in a flaming coffin. At any rate, now that the World War is over, the parachute has carried the day in military and naval circles, and many a pilot has saved his life by simply slipping out of the cockpit of his foundering plane and floating down to safety with the aid of his silken umbrella. For example, Colonel Charles Lindbergh would never have lived to win immortal fame by flying the Atlantic from New York to Paris in the Spirit of St. Louis had it not been for the parachutes which saved his life on four different occasions. Another striking instance was when two of the Good-Will planes of the United States Army Air Service on their great flight around South America collided in

mid-air just as they were about to descend. The commander of the flight, Major Herbert Dargue, and his alternate pilot, came down safely by the aid of parachutes.

A parachute jump sounds like a hair-raising thing to most people. It is, in fact, quite a nerve-racking experience for the beginner. Unless there is a lot to spur him on, he finds it very difficult to let himself go out into space. The 'pull off' is the usual way to launch a jumper for his first attempt. He clambers out onto a wing, and holds on to a rear strut. While perched there he pulls the cord that releases the parachute. The rushing speed of the plane causes the great spread of silk to billow out, and this drags the tyro out into space. He usually tries to hang on to his strut and is hauled from it by main force. He doesn't fall far, but goes swimming gently down. The first time he makes an actual jump, falls dead, and waits until he has dropped the orthodox ten feet before he pulls the cord which releases the parachute, he is likely to have a good fright. His parachute has failed to open — something has gone wrong with it — he is sure of that. Then the silken cloud billows above him.

Practiced parachute men find the aërial life-belts nothing more than pleasant sport. Major Orde Lees, one of the most interesting fellows I have ever met, uses the parachute to make social calls much as earthbound mortals use the motor-

car. On one occasion, when he was in Japan, he asked a pilot to drop him off at Yokohama, where he had friends. As the plane approached the city, he got out onto the wing, and, suitcase in hand, stepped overboard. A few dozen Japanese agricultural laborers were considerably astonished when he descended in a rice field, packed up his umbrella, and, suitcase still in hand, walked into the city and to the domiciles of his hosts. When the Prince of Wales visited Japan, Orde Lees planned to greet His Royal Highness by landing his parachute on the deck of the Renown. This time his umbrella did not work just right. It opened much too late, and the Major made a huge, undignified splash in the water just ahead of the Renown. A launch from the warship fished him out, and took him aboard to meet the Prince, wet, but still not without dignity.

The first parachute leap for life on the American record was that of Lieutenant Harold R. Harris, Chief of the Flying Section of McCook Field. It took place a couple of years ago and was quite a thrilling episode. He was testing a pursuit monoplane and traveling at high speed at two thousand feet, when the plane began to wobble in the air and fell out of control. It seemed to be going to pieces. Without a parachute, Harris would surely have been a goner. However, he had his life-preserver and promptly used it. He leaped and landed safely in a grape

arbor. The plane crashed just at the back door of a house. He told me afterward that the only thing he worried about on his way down was his favorite fountain pen which he saw slip out of his pocket. But ten minutes after he had landed, a reaction came and he was frightened stiff.

Some months before Harris's adventure a mail-plane pilot had made a parachute jump from his machine over Chicago, but the authorities questioned the necessity of the leap and seemed to think that the flier could have brought his machine safely to earth. That made Harris the first man to save his life by the umbrella route. It made him the first member of the Caterpillar Club — thus named because the silk used in the parachute comes from the caterpillar.

Nine-thirty A.M. We have been out for nearly an hour and a half now. We have crossed the snow-capped summits of the Transylvanian Alps and, judging by the shrill screams of the vibrating wires between the upper and lower wings, we must be descending to a lower level. Far below we sight a river steamer towing two long strings of barges. On our left at the entrance to the Rumanian plains the Danube makes a tremendous bend like a letter U. The country is still quite rugged and we are flying over the foothills. But these have farms right up to their very summits, much like the farms you see high up on the crest of the Alleghenies in flying from

Washington to Pittsburgh. The altimeter registers eight thousand feet, and we are still so high that single trees on the edges of fields are almost indistinguishable.

The Rumanian doctor has just waked up again. He slept all the way across the mountains when we were looking down on some of the grandest scenery in all Europe. Evidently no thoughts of a possible forced landing disturbed him. When every passenger airplane has three motors and is constructed so that it will fly on any two, then all passengers will be able to cast fear to the passing winds and sleep no matter through what skies they fly. The Rumanian has written me another note saying that we are behind time and bucking a stiff head wind. He says the incoming plane from Bucharest to Belgrade had an unusually favorable following wind yesterday afternoon and made the last three hundred kilometers in ninety minutes.

The Rumanian plain looks much like the parts of Yugo-Slavia and Hungary over which we flew. But this seems to be a more thickly populated country and we pass an amazing number of villages. We are still flying so high that it is even impossible to distinguish the farmers ploughing in their fields.

The doctor has just got out a lunch-basket. Spreading some newspapers across his knees he slices off chunks of bologna with his pocket-knife,

places them on hunks of bread, and then washes down the food with swallows of red wine. Apparently airsickness is something unknown to this commercial traveler of the skies.

At exactly twelve-fifty-two, seven minutes behind schedule, we glide toward the modern-looking city of Bucharest with its parks and palaces. Tipping her over on one wing our pilot brings us down in a tight spiral, and here we are on the outskirts of the 'Paris of the Balkans.'

CHAPTER XV

OVER THE BLACK SEA TO THE GOLDEN HORN

To-night we sleep in old Stamboul. That is, we shall if the gods are kind to us and our Spad doesn't splutter and konk out over some Bulgarian bandit lair. Now the Bulgar is really quite a cheery, pleasant fellow; at any rate, the Bulgars were that we used to see coming into the Allied prison camps along the Seres road on the Macedonian Front. They are fine fighters and have the reputation of being the best farmers in the Balkans. But lately bandits have been holding up the Oriental Express on its way across Bulgaria to Constantinople. So that famous train hesitates at the frontier until daylight these days, and is allowed to start across Bulgaria only after the sun comes up. However, if our Lorraine motor keeps running, we shall see nothing of this turbulent Balkan State and its bandits, except from the sky.

A year or so ago two Danish airmen, who were on their way from Copenhagen to Tokio, had a forced landing in a pirate resort along the China coast between Canton and Shanghai. The buccaneers took everything they had but the plane. They even deflated the huge pneumatic tires thinking that would prevent the Danes from

taking off. They lugged away all of the spare parts and also the fliers' personal effects. But the Danes somehow managed to bump out of the field and into the air.

We got away from Bucharest at one-fifteen this afternoon and according to our C.I.N.A. aërial time-table we are due to come in sight of the minarets of Constantinople in exactly four hours. Our flying doctor friend kissed my wife's hand, made a sweeping bow, and bade us farewell at the soggy Rumanian aerodrome. From a thousand feet in the air we took a final look at the gay capital and the wide 'Chaussée' boulevard, the one with the center avenue reserved for the cars and carriages of the royal family.

According to Thucydides the early inhabitants of this richest and largest of the Balkan countries were magnificent fighters. Pliny and other Roman historians add their testimony by stating that the Dacians who inhabited this plain and the mountains around it were the stoutest warriors and the most sterling men encountered by Rome in the golden days of her imperial expansion. Trajan was the Emperor who made this territory a Roman colony.

We have been out for twenty-five minutes now and have climbed to an altitude of fifteen hundred meters. The plain under us has been as flat as a table and looks even richer than those famous grain fields of Hungary and Yugo-Slavia. We are

above the delta of the Danube now, though a long way from the mouth of the stream. We have followed that mighty river, criss-crossing back and forth over it, all the way from its source in the hills of southern Germany. Down here it is so lined with villages that its banks look like one city thirty or forty miles long, with a single waterway for a main street. The delta of the Danube has had a wild history. Over it have swept the armies or migrations of the Romans, the Goths, the Huns, the Slavs, the Magyars, and the Mongols. But apparently after these tides of men had all swept by, the descendants of the Romans remained as the dominant people. Everywhere below us we see peasants at work in the fields. Their ploughs are drawn by oxen with Roman names, such as Cæsar and Cicero, Caligula and Nero.

After the fall of the Roman Empire, Rumania became a second Palestine, a country over which innumerable armies passed. But right down to the present the people have gloried most of all in their Roman blood.

As we fly over the Danube we also cross the international boundary to Bulgaria. We have climbed several thousand feet higher now and are nearly a mile and a half above the plain. Ahead are low mountains, the Balkans, and the country under us is becoming more and more like the Black Hills of the Dakotas. Some are cultivated

right up to the summits, so it must be a flourishing region. The roads look fine, and some, no doubt, date back to the time of the Romans. An hour and a half south of Bucharest we cross a river, the Tundza, and far ahead we catch our first glimpse of the Black Sea. We are nearing quite a large town, and down there is a huge shed like the Zeppelin hangars at Friedrichshaven on Lake Constance. So this must be Jambol, the principal airship base established in this region by the Germans during the World War and from whence they launched a number of spectacular raids. I remember one of them very vividly. Chase and I were in Egypt shortly after it occurred and heard a lot about it. The Germans of East Africa had been carrying on a picturesque guerrilla campaign against General Smuts with his British and Boer army from Rhodesia, the Transvaal, and Cape Colony. The German high command conceived of a brilliant and daring plan. It was to send a Zeppelin across the Mediterranean, south over Egypt and the Sudan, and over the jungles and mountains of Central Africa to aid their hunted fellow countrymen who were trying to dodge Jan Smuts. To the wild excitement of every one in Egypt the giant airship flew far up the Nile, but for some reason it turned and went back to Bulgaria without reaching its destination.

Centuries ago, when modern Russia was still a

country of comparatively little importance under Polish or Tatar rule and when Constantinople, then known as Byzantium, was still the capital of the Eastern Roman Empire, the Bulgars and the Serbs were their powerful enemies. The Bulgar is the bulldog of the Balkans. The country is one of open-faced, happy, outdoor people. There is a particularly bitter enmity existing between them and the Greeks. Its origin dates back to religious differences in the fifteenth century, when the Bulgars claimed that they were tyrannically treated by the heads of the Greek Orthodox Church. So they broke away and formed their own Bulgarian Orthodox Church and at the same time the Serbs did likewise. Bulgaria is the youngest of the Balkan States, having gained its freedom from Turkey only about fifty years ago.

It is three o'clock now and we are crossing another vast plain, with the Black Sea only a few miles ahead of us. Instead of staying above the land or at least following the shore, our pilot is taking the shortest route and seems to be cutting straight across the ancient Euxine. The American army world fliers traversed this same sky route between Constantinople and Bucharest, but they kept to the mountainous interior of Bulgaria. We too are flying in a landplane, so we wonder just what the pilot has in mind in putting out to sea like this. Evidently he has implicit faith in our single Lorraine motor. . The sky is

cloudless and the surface of the water smooth except for tiny ripples. The coast on our right is rockbound with no stretches of sandy beach, and the country to the southeast beyond the jagged cliffs looks black, forbidding, and sparsely settled. Perhaps the pilot thinks it would be just as pleasant to bring a landplane down out here in the water in case of a forced landing as it would be to bump into those lonely black mountains. I wonder if the color of the mountains has given the sea its name? There is not a ship or even a fishing boat in sight, and we are getting farther and farther from shore. In fact we are so far from the coast that it would be impossible to reach it in a glide. Here again is a perfect example of the necessity of multiple engines for commercial planes. The most direct air route from Bucharest to Constantinople is across the Black Sea, but no plane should tackle it except one that is certain to remain in the air until land is reached.

We are flying over the tip of a little peninsula now, so it seems that the stretch of water we have traversed thus far is really the Gulf of Burges, a large arm of the sea. A mile or two down there on our left is the city of Burges, the principal seaport of Bulgaria. The harbor is almost entirely surrounded by a great breakwater. Back of it stretches a rich plain.

Now we are striking out over the Black Sea

and in fifteen minutes we are entirely out of sight of land. My wife has fallen asleep. Any one who can sleep in a landplane, traveling at the rate of a hundred and ten miles an hour across the lonely Black Sea, must have steady nerves. This seems to be a stretch of water where ships seldom pass and the main sea lanes between Constantinople and the South Russian port are many miles to the southeast of where we are flying.

Three hours out from Bucharest. Although still above the sea, we are approaching land, and now we're flying over a sandy beach. On our way across the water we saw not one whiff of smoke from a steamer and not even a rowboat. Far to the south now is a stretch of hilly land and this side of it are the waters of the Sea of Marmora. At five minutes after four the far-famed minarets and domes of Constantinople appear on the distant horizon like some fairy city of our dreams. Instead of flying on to the shores of the Golden Horn, we drop down at the suburb of San Stefano, twenty miles this side. This is the same flying-field where the Turkish Government delayed the round-the-world fliers for two days, simply in order that the Turkish cadets might have an opportunity to inspect the three huge American biplanes.

An ultra-polite Frenchman, with sparkling eyes, opens the door of the Spad and offers my wife his hand so that she may descend. He apologizes for

the appearance of the aerodrome buildings, which are hardly more than shacks, and explains that the Turks are like the Mexicans in that they put off until to-morrow everything that should be done to-day. He also adds that we have arrived during the month of Ramadan, the Mohammedan period of prayer and fasting. During this time no true believer is supposed to touch either water or food from sunrise to sunset, but our French friend says that they stay up all night, eating more food than at any other time of the year and also drinking much whiskey despite the fact that intoxicants are absolutely forbidden by the Koran.

As we climb into a big Fiat car and drive toward Constantinople, he tells us that if we will come out to the aerodrome on the morrow he will take us for a special flight over the city, up and down the Bosphorus and even as far as the Dardanelles. This is indeed an alluring invitation and we accept at once, with the proviso that he join us for dinner and a little Ramadan revelry of our own at the Pera Palace Hotel.

After dinner our French friend calls a Turkish guide and we all drive in a careening taxi across Galata Bridge and through a maze of narrow streets behind the Grand Bazaar to see what is now one of the forbidden sights of Stamboul. Through the back door of an empty storeroom we are led into the presence of a group of Mo-

FARMS AND VILLAGES, RIVERS AND CITIES SCURRY BY WITH SUCH SPEED THAT WE ARE UNABLE EVEN TO COUNT THEM

STAMBOUL AND THE GOLDEN HORN

hammedan religious fanatics. There are about a score of them. They are the celebrated whirling dervishes. Recently their order was suppressed by command of Mustapha Kemal. The Chelebi of Konia, their chief Mevlevi, or high priest, was said to be wielding too much influence in politics. Mustapha seized their monasteries and their funds and then decreed that they should no longer even hold their wild dances or wear their tall brown fezzes and dervish robes. But the fanatics of this ancient order are proceeding just the same as before, only in secret. A moment after we enter the storeroom their musicians, playing on Turkish flutes and drums, strike up a weird tune. The dervishes leap to their feet and start whirling slowly. Faster and faster become their gyrations. We watch them for nearly an hour, and when we leave they are still whirling like mad. Their ceremony is supposed to bring about a mental state of ecstasy and exaltation with Allah. Jelai-ed-din, a Persian mystic, is credited with being the founder of the order, but Turkey has been its stronghold ever since early in the thirteenth century.

A French journalist made a fourth member of our party on our visit to the dance of the whirling dervishes. He had lived in the Near East most of his life and had many caustic remarks to make regarding recent changes in Turkey. Although he had little sympathy for the dervishes and the

manner in which they tortured themselves with pins and knives, he thought Mustapha Kemal was going too far. He particularly disapproved of the edict forbidding the Turks to wear the characteristic red fez. He pointed out two fat Turks who looked ridiculous in their new derby hats and another wearing a baby's cap. He said that several people had been shot because they still insisted on wearing the old fez.

He also said that hard drinking seemed to be the accepted custom among the present Nationalist leaders, and told of parties he had attended where the men started off the evening by drinking wine and arrack with their dinner and then spent the rest of the night gulping down glass after glass of cointreau, a particularly potent drink. He said they already consider themselves as advanced in the ways of Western civilization as any other nation, that they have almost entirely discarded their religion, as indicated by the way in which they tossed aside the Caliphate, and that they now even imagine that they virtually won the World War! 'We thought we had lost it, but now we know that we didn't,' is the way they put it.

We had hoped to fly to Angora, but the plane service had been temporarily discontinued. It takes twenty-four hours to reach the new Turkish capital by train. But we had no intention of going by that route. The trains were said to be

full of bugs. Several European ambassadors and their attachés have had special outfits designed so that they can practically seal themselves into a bag when they go to sleep at night, and thus escape being bitten anywhere except about the face. The Turks apparently don't mind the insects, and feel the same about them as a German traveler I once knew who had lived in Central Asia for several years. He said that he had made the intimate acquaintance of about a hundred different varieties and that when you once got used to them they really provided an excellent substitute for a bath. He added that for several weeks after his return to civilization he actually missed them and felt uncomfortable — that lonesome feeling!

We spent the morning after our arrival, cruising about the sky over Constantinople, the Bosphorus, the Sea of Marmora, and looking down on the battle-fields at Gallipoli.

Constantinople and the Bosphorus from the air provide about the most thrilling panorama that we beheld on our long tour of the skyways of Europe. As an aërial spectacle this day's sights ranked with our trip over the Alps, our flight above the ice-fields of the Gulf of Finland, the panorama of the battle-fields of Belgium and northern France, and the view from the sky as we sped along over the French Riviera and the Spanish coast.

Our pilot flew north from the aerodrome at San Stefano until we reached the twin mountains that guard the junction of the Black Sea and the Bosphorus. Then, dropping down to only a thousand feet above the sailing boats, villas of the Turks, and ancient crumbling walls and towers dating back to Roman days, we flew from end to end of the Bosphorus in ten minutes. Most impressive of all were the 'Castles of Europe' and the 'Castles of Asia,' Roumeli Hissar and Anadoli Hissar. They are on either side of the strait, right at the narrowest point. According to tradition this is where Darius led his army over on a pontoon bridge when he went to fight the Scythians. We are told that it was the first time that Asiatic foot ever touched European soil in a military invasion. The picturesque walls and massive round towers, which form these castles on either side of the Bosphorus, were built by the Ottoman Turks. They are crumbling now, but even in their state of decay they are the finest monuments and mightiest fortifications ever erected by the Turks. Then we looked down on the hills of European Constantinople, the great conical tower and the dense masses of boats in the Golden Horn and the endless stream of humanity pouring like ants over Galata Bridge, after which our pilot circled twice above the minarets and domes of the great mosques on the Asiatic shore.

Heading southwest, we passed almost over the San Stefano flying-field again and then headed straight across the Sea of Marmora. For nearly an hour we flew over the blue waters of this Turkish sea before we sighted the hills on either side of the Dardanelles ahead. We flew on over the ancient Hellespont.

The earth was green. The strait below was like a snaky ribbon of silver laid on light emerald. When the plane swooped down to a low level we caught a better idea of the land, and glimpsed the craggy steeps, stony plateaus, gorge-like gullies, and desolate beaches that made this land of the strait a savage, forbidding fighting-ground. We went twisting and circling above the beaches and hills that are Gallipoli.

On the Asiatic side stood the venerable bulk of Mount Ida, between which and the strait lay the Plain of Troy, the first and preëminent space of land of this region of the strait. It looked as bare and windswept as Homer has described it. Surely no other part of the earth on this large globe is more steeped in history. The Plain of Troy seems to indicate and tell with an oracular gesture the whole stream of several thousand years of history, from the clash of Hector and Achilles to that last melancholy morning in January of 1916, when the British evacuated the tip of Gallipoli. The war of the Iliad, so modern historians will have it, and the ill-starred strug-

gles of the Anzacs were flowers grown from the same seed — the meaningful place that the strait of the Dardanelles holds in the geography of the world. For the beauty of no false Helen did the hosts of Agamemnon set forth in their ships, but rather to clear the Hellespont, just as did the allied might of Britain and France. For Troy and the horse-taming Trojans controlled the narrow waters through which the produce of the Black Sea, then as to-day, had to pass. It is true that the warriors in bronze armor had no heavy artillery with which to pelt the ships treading the narrow channel, and, further, Troy lies some few miles from the beach. But then, as now, the strait was difficult of navigation, particularly for ships that seek to enter it. A stiff current runs out from the Black Sea, and sailing against it was a hard task for the primitive Greek merchantmen. It was the custom to unload vessels at the mouth of the channel, transfer their cargoes to the other end of the strait by land, and tow the empty ships through. The land route for the merchandise led past Troy, and the kings of the city levied a tax on the caravans. Taxes seem to have been as unpopular four millenniums ago as now, and it was to rid themselves of the burdensome impost placed on their merchant ships that the Hellenes besieged Ilium for ten years and burned the topless towers.

It was not difficult, looking down from above,

to get a vivid idea of the difficulties fighting ships would encounter in trying to make their way through the long narrow passage, as the Allied fleet did with disastrous results in 1915. The Narrows seemed pinched so tight that you would have scarcely imagined that a great dreadnaught should have got through them at all. Add to that the thought of heavy cannon firing from the high bluffs on either side and moving about as they pleased to avoid the fire of the ships, and further a stream of floating mines sweeping down on the current that runs from the Black Sea into the Ægean, and you will not wonder that the Dardanelles are now admitted to be impregnable to naval attack. During the Napoleonic wars a British fleet ran the strait in the face of a negligible Turkish resistance, but a mere preparation by the Turks to mount guns out there after the ships had passed was enough to send the British admiral hastily back the way he had come, and even then primitive pieces of ordnance firing stone cannon balls damaged the ships and caused a considerable loss of life on their decks. During the Russo-Turkish War a British fleet went through to help the Turks against the Russians descending on Constantinople. The mere possibility that the Turks might turn on them or that the Russians might occupy the strait by a land advance gave the Admiralty staff a nervous time of it until peace was signed.

Lord Fisher, First Sea Lord during the World War, served as a young officer in this expedition, and, remembering, opposed the naval attempt to run through the Dardanelles.

One could see in the mind's eye the great array of ships down there on the sea in front of the strait, the tremendous bombardment of the forts and the silencing of the outer forts. Now the great war vessels steam slowly into the channel and along toward the Narrows, the bluffs on either side of which are wreathed with smoke. It is the smoke of exploding shells. The ships are firing with their huge guns as they advance, and across the narrow neck of land that is Gallipoli. A squadron of vessels of the Queen Elizabeth class, the most powerful in the world, are firing over the short space of hills at the forts, which they cannot see. High above, aeroplanes like our own winged craft, act as eyes, and direct the fire. The guns of the forts of the Narrows are still. It appears that they are silenced. The flotilla in the channel continues to advance. Mine-sweepers clear the way in front of it. It seems as though it will pass the Narrows and thus be done with the most difficult part of its task. But now, when the vessels are in easy range, the forts on both sides open fire, as though they had never known a bombardment, and floating mines come down the stream. Ships are hit by shells right and left and the mines make hits. A French dreadnaught blows up. Two

great British warships list and sink. The fleet backs out. The attack has failed. It has failed only to give way to a more terrible attack, the assault on the Dardanelles by land.

From on high we looked down on the long tongue of land, Gallipoli. Quiet and green that day, it did not look its part of one of the most bloody battle-fields of the World War, and yet on that slender stretch of earth the British, including the Anzacs, lost one hundred and fifteen thousand men in killed, wounded, and missing, and another hundred thousand were put out by the hand of disease. In addition to these were the losses of the Turks, the number of which is uncertain. But when we flew low we could understand better. The marks of the trenches still scarred the rugged face of the earth. There were the fearful beaches, small platforms of land here and there along the peninsula, which form landing-places on a coast where for the most part the bluffs run straight down to the water. There was Beach Y, the bloodiest of them all. At dawn that fateful first day of Gallipoli the freighter Clyde, weighed down with troops, pushed its way as near to shore as it could and ran aground. Pilot craft pulled a string of boats loaded with men toward land, so that the men might scramble ashore and the boats might stretch from the Clyde to the beach and make a bridge of boats. A hurricane of rifle, machine-gun, and shell fire swept

the water. From every point of vantage on land the Turks blazed away. The men in the boats died like flies, and those that got ashore dropped right and left. A pitiful handful dug themselves into the sand and held out as best they could. Men came in steady streams across the bridge of boats, and the bullets and shrapnel raked them. Hundreds pitched into the water, and the survivors found land nearly as forbidding. But slowly the devoted bands in the sand trenches increased, and, though death reaped his harvest among them with a tireless hand, they at length were strong enough to charge and clear a bit of ground for themselves and dig in with some semblance of military art. It was a ghastly day at Beach Y, and it was nearly the same at the others. To the constant fire of the Turks and the brave counter-attacking of the Moslems was added the agony of thirst. There was no water near the beaches of Gallipoli. Every drop had to be brought by ship from the Greek islands and landed under heavy fire.

Down there at the tip of the peninsula is the humpbacked hill of Achi-Baba. The British spent measureless blood to buy it, and then they did not get it. Farther up was the hill of Sari Bair, where the Anzacs went through hell and came out heroes. Still farther on, at the tip of Gallipoli's widest girth, is Suvla Bay, where, after the fighting had gone on through desperate

days, the Anzacs landed for what was to have been the final decisive attack and where in an inferno of fire they hurled themselves forward like demons, but found the stars against them. From the sky above one could picture the pitiful narrow strips of earth that had been paid for with so much blood and suffering, and where for months, after the hope of success had gone, men still held sandy trenches crowded on narrow ground and still died and still bore the torments of thirst.

Gallipoli receded and became soft and gentle again, as we climbed into upper atmospheres. But its beauty was ghostly, as we thought of the blood that had drenched its sand and enriched its green.

CHAPTER XVI

AN ADVENTURE WITH FOG ABOVE THE THURINGIAN FOREST

From Constantinople we fly back to Central Europe over the same sky route, and then one hour out from Munich, our flying Comet circles the walls and towers and ancient gates of one of the most celebrated cities in the world, old Nürnberg. On a hilltop a few miles to the northwest, we land near the twentieth-century industrial suburb of Fürth.

The rest of that day and all the next, we relive the colorful, tapestried days of the old castle of Nürnberg, as we walk in the footsteps of Conrad and Lothair, Henry the Proud, Frederick Barbarossa, Sigismund and Mark of Brandenburg. With the shades of Regiomantauns, the mathematician, Martin Behaim, the cosmographer, and other celebrated men of an earlier time, we wander through the quaint old streets of this enchanting city.

With light hearts we buy mechanical toys and a tinkling music-box — little dreaming that on our next flight we are to lose our way in a fog above the Thuringian Forest, and that we are to come within a hair's breadth of crashing into a mountain.

Three-twenty-five P.M. Off for Leipzig. This huge Dornier Comet is a curious combination of awkwardness and grace. Once in the air it flies beautifully. But when bumping over the ground for a take-off, it rumbles along like a Deadwood stage-coach rocking and careening around some dizzy curve in the Black Hills. It requires a tremendous run in order to get up flying speed.

Flying low, barely a thousand feet, we follow the Rezat River with its curiously pretty islands. At the industrial city of Erlangen we swing a bit to the east. Then at the little town of Forchheim on the Weisent, we leave the Rezat, the railway, and Ludwig's Canal which all run parallel. We are now cutting across a stretch of hills and plateaus that has been honored with the high-sounding name of 'Franconian Switzerland.' Twenty minutes out from Nürnberg we cross a short, narrow gorge with a charming village and a striking old ruined castle looking down on it from a near-by cliff.

We don't like the looks of the weather one little bit. It is getting hazier and hazier.

Four-ten. For the past twenty minutes we have been flying either above the clouds or through a smoke-like haze. Under us is the Thuringian Forest, and somewhere up ahead the low tree-clad mountains of the Franconian Switzerland. Our single Rolls-Royce motor is humming along without missing a beat. For that we are

thankful. This is the kind of dirty weather that makes one realize what a really tremendous advantage multi-engined planes have. With your single-engined ship if anything goes wrong you simply have to come down and make a forced landing. Passenger airplanes must be, and are being, constructed so that it will never be necessary for them to come down because of engine trouble. To be sure, the number of forced landings made by commercial airplanes is slight. But nothing will ever give air passengers quite such a sense of security as the knowledge that when they leave one airdrome they are not going to make any unscheduled stops.

We have flown through rainstorms, through howling gales, and through the blackness of night, but this business of cruising blindly through a fog over Central Germany is the least fun of all. Several months after this Nürnberg–Leipzig–Berlin flight, I happened to be talking with the famous British long-distance airman, Cobham, and I asked him to tell me about the storms that he had encountered in his aërial wanderings. Since we had last met, he had added to his laurels by making the first round-trip flight from England to Australia, covering a distance greater than that of a flight around the world. For his achievement he has now been knighted by the King.

'There are two types of weather for which I

haven't the least affection,' said Sir Alan. 'One is fog and the other is flying sand. Some months ago, when I was telling you about my flight across Africa from Cairo to the Cape and back, I may have mentioned something about the sand we encountered. Elliott, the wizard mechanic who had accompanied me on so many of my sky jaunts across the continents, set out for Australia with me. But it was on our way from Baghdad to the Persian Gulf that we got our first taste of an Asiatic sandstorm. Instead of trying to climb over it, thus running the chance of losing sight of the combined waters of the Tigris and Euphrates which we were to follow, I remembered my experience with African sandstorms, and plunged straight into the blizzard of dust, low enough to keep the river in sight so that we could drop down and anchor in the river if the swirling sand got too thick. As we plunged on, the flying sand was as blinding as a London pea-soup fog, and we finally dropped down to the surface of the water and tied up to the sandy shore.

'The storm seemed to be nearly over by noon of the following day. So with a final "Salaam Alicum" to our Arab hosts, we again headed toward the city of Basra. But within a half-hour we were into another sandstorm. We were over the delta of Lower Mesopotamia now, and the many shallow channels made it confusing for one trying to fly along the course of the main stream.

So I kept down within a few hundred feet of the ground. Suddenly there was a crack! I heard it above the roar of our motor. It sounded as though it came from the cabin behind me and I thought possibly one of the rocket pistol cartridges had exploded. Possibly the plane might be on fire. So I shouted an inquiry through the window to Elliott, who was riding inside.

'"The petrol pipe has burst," a weak voice came in return, so weak that I could scarcely hear it above the hum of the motor.

'We were flying low, so it was impossible to shut off the motor and glide in order to talk with Elliott, and we communicated by notes. Elliott penciled a line saying that the petrol pipe leading from the reserve tank in the cabin to the supply tank on the wing had burst, struck him in the arm, and that he was "bleeding a pot of blood." As he handed up the message I saw how frightfully pale he was. Ought I to land and attempt to give him first aid? Or should I keep on to Basra where there were doctors? If I dropped down on the river, I might be unable to maneuver the machine around and get off again without Elliott's help. Besides his wound appeared to be too serious for amateur aid, so we kept straight on through the storm with throttle wide open. I raced the engine. The heat became terrific. Then the storm suddenly cleared, we climbed to where it was a bit cooler, and off in the distance we

could see the squat, hot seaport of Sindbad the Sailor. In the meantime Elliott had written me that he thought he had a hole in his side and that he was breathing through that hole.

'When we got down at Basra, he was in a state of collapse. When we lifted him out, he weakly ordered some one to shut off the oil when the engine stopped. His thoughts were of his motor instead of himself.

'I tried to explain to the engineers at Basra how Elliott had been hurt. They all shook their heads. They said it was quite impossible for the petrol pipe to burst because it was not a pressure pipe. It couldn't explode. There was nothing in it to explode. That sounded reasonable; but, on the other hand, there was poor Elliott already half dead. To settle the argument an examination of the pipe was made. We found that it had been pierced by a bullet!

'That bullet had entered the side of the plane, had cut a gash through the dispatch box from the Foreign Office to the Governor-General of Australia, had drilled through the petrol pipe, and then entered Elliott's body. The doctors who had rushed to the flying-field found that the bullet had passed through his arm, gone right on through his chest, and then lodged near the opposite armpit. The explosion I had heard was the sound of a rifle from the ground and the impact of the bullet when it struck the cabin.

'There was little doubt of what had happened. Some fool Arab had taken a pot shot at the strange bird as it had gone roaring by only a few dozen yards off the ground.

'We took Elliott to the hospital, where the doctors said his wound was extremely serious, but that he ought to pull through. That night he died.'

It had been just about two years since Elliott and Cobham had landed at that same Basra airport on their great flight out to Rangoon, Burma, and return, with Vice Air Marshal Sir Sefton Brancker along. And now Elliott was dead because some crazy wandering tribesman had been carried away by his brigandish instinct to shoot at anything in sight.

That, of course, was just plain Arab. I, myself, had had plenty of opportunity to witness the desert nomad's propensity to blaze away. In my war-time trip into the Near East, when I went to join the quite unknown Lawrence of Arabia, I had to be constantly on the necks of my Bedouin escort for their promiscuous shooting.

At Basra, British headquarters asked Cobham to try to point out the spot where the shooting of Elliott had occurred. He flew off in one of the local Air Force planes and found the location at the edge of the swamp. The authorities looked up the tribe camped near the site, and clapped the chief into jail. It was not long before the

culprit was produced with a confession. Yes, he had been out in the sandstorm and had seen the great bird go thundering by. Yes, it was so strange that he had taken a shot at it. There seemed nothing much to do about this unregenerate son of the sands. The best way to teach these chaps not to open fire on airplanes again was to make the tribe pay a heavy fine.

On our flight from Nürnberg to Leipzig we too had some thrills and they were not unlike those that Cobham had experienced. Fortunately, however, we were not flying over a region inhabited by predatory Arabs with a wild desire to take pot shots at anything moving rapidly. At four-fifteen, fifty minutes out from the flying-field at Fürth-Nürnberg, the fog became so thick that I wondered why the pilot did not turn around and go back. Instead we kept dropping lower and lower until we were just above the tree-tops.

The visibility is so poor that we can see for only a bare hundred yards or so. We are following a single-track railway line. I hope the pilot knows all the landmarks because they are getting rather indistinct now and the villages seem to look exactly alike. For the past ten minutes he has been flying first in one direction for a little bit and then in another, evidently trying to find a tunnel of thinner haze through which we can pass. Somewhere just ahead of us is the divide between northern Bavaria and the provinces of

Thuringia and Saxony. The mountains are getting higher, and unless this fog breaks I do not see how he can possibly find his way through and at the same time stay down so close to the treetops.

Now we are turning in a wide circle and heading south. I wonder if he has given it up as a bad job? At any rate, there are four passengers in this cabin who sincerely hope so. The other two are men, one a Viennese traveling salesman and the other an ex-German officer with a wooden leg who was captured by the British during that guerrilla campaign in the jungles of East Africa. Both are holding on to the sides of their chairs and there is a tense, worried look on their faces. One feels so helpless back here in the little cabin of a fragile plane hurtling through fog at a hundred miles an hour.

No, we are swinging north again, so evidently the pilot intends to have another shot at it. Judging from the crazy way in which we are zigzagging, there is little doubt but that he has lost his way. At any rate, the four of us in here are utterly lost and unable to tell, even with the aid of our map, what any of these villages are that we are flashing by. First we fly up one valley, find it closed with a dense wall of fog, then we turn, fly back a little way, try another valley, and so on.

It looks as though the pilot is going to have a

try at this next valley, whether he can see his course or not. By Jove! I wonder if he thinks we can tunnel through that hillside?

For the next half-hour I lost all interest in the notes that I had been keeping. We passed through one of the most thrilling experiences of our lives. In trying to pierce the fogbound valley and get over the mountain divide to the plains of Central Germany, we came within a few feet of crashing into the side of a cliff. Just as it looked as though we were going to plunge into the trees, the pilot spun his wheel to the right, we banked sharply, the wheels almost grazed the tops of the pines in front of us, and we swung back south. My wife tells me that all she could do was to look at me, while I gripped my seat and yelled, 'Climb, you ——, climb!' It was a tense moment if there ever was one. This time we kept on going south and made no further attempt to get over the mountains. But the pilot still seemed to be uncertain as to where he was. Flying almost down to the ground, we flashed over farmhouses, villages, spires, and ruined castles. At last we saw a town under us that looked like a place we had seen before. Sure enough, there was the Wagner Theater. Then we knew it was Bayreuth, the historic shrine of Wagnerian music drama. The exact region where we had our close shave with the fog was somewhere between Kumbach and Lobenstein.

From Bayreuth back to Fürth-Nürnberg was only a short flight, and we were indeed delighted when our lumbering Dornier Comet dropped on to the aerodrome. Until passenger airplanes all have multiple engines and instruments to enable a plane always to keep right side up in a fog, the public in general will not take kindly to air travel. (This is rapidly being done, and indeed has been done on many lines since our return home.) In pleasant weather I suppose that it is just as safe as traveling by train or automobile, or possibly even safer, but in thick fog or heavy storms there is not much fun flying in a single-engined plane. Moreover, wireless telephony should be in use on every commercial airway in Europe just as it is between London and Paris, London and Amsterdam, and London and Brussels. That will enable a pilot to know just what the weather is going to be like a few minutes ahead, because the wireless stations scattered along the route will keep advising him. Then, too, as one of the directors of the Luft Hansa Company remarked to me some months later on, we must develop pilots with the same ability possessed by Lindbergh, Byrd, Chamberlain, and Brock, ability to navigate in fog or above the clouds by means of instruments instead of always depending on landmarks. Nor is there any doubt but that the successful nonstop trans-Atlantic flights will give a great impetus to navigation by instruments.

The experience we had en route from Nürnberg to Leipzig gave me a better appreciation of the magnificent feat of our Army Air Service world fliers when they crossed the North Atlantic and found their way to Iceland and Greenland through blinding fog. It seemed to me that the story of their jump from Reykjavik, Iceland, to Fredricksdal, Greenland, was one of the epic stories of American history. The four fliers who got through were Captain Lowell Smith and Lieutenant Leslie Arnold in the Douglas cruiser Chicago, and Lieutenant Eric Nelson and Lieutenant Jack Harding in the New Orleans. Wade and Ogden had lost their plane on the previous flight when it sank in the North Atlantic near the Faroë Islands.

'For the first five hundred miles after leaving Iceland,' said Smith in telling me about his experiences, 'we flew through a perfect sky, but, shortly after passing the U.S. Destroyer Barry, which was flying danger signals to inform us that there was bad weather ahead, we plunged into fog and rain and wind. The deeper into it we went, the denser grew the fog and the greater became the velocity of the wind. This is an unusual combination, because wind and fog usually do not go together. The fog drove us right down to the water and was so thick that we flashed over the cruiser Raleigh without seeing her. Seventy-five miles out from Greenland we struck

the first floes. As we neared the coast, the ice increased until we were flying over a seemingly endless expanse of fantastic bergs of every size and shape. Some looked as high as the Chicago Tribune Tower or the Woolworth Building. Had we seen them under different conditions, the sight, no doubt, would have inspired us. As it was, they were terrifying, because we never spied them until we were right upon them. We had to fly as low as thirty feet off the water in order to keep our bearings at all, so you can just imagine the close shaves we had while playing tag and leap-frog with those icebergs!

'The presence of all these bergs and so much ice made the fog even more dense than before. We were traveling along at a speed of ninety miles an hour, and could see only between a hundred and a hundred and fifty feet ahead. Use your own imagination as to how soon a plane traveling at that speed could eat up the distance of visibility out there in front, and then try to figure out how little time was left us to sight a berg ahead, decide which way to turn, and then execute the maneuver. Three times we came so suddenly upon huge icebergs that there was no time left to do any deciding. We simply jerked the wheel back for a quick climb, and were lucky enough to zoom over the top of it into the still denser fog above. Here we were completely lost and unable to see beyond the "prop" and wing-tips. Blindly we

groped and felt our way downward, hoping against hope that the little space into which we were descending just above the surface of the water would be clear of ice for a great enough distance to enable us to glance around, size up the situation, and get set for dodging the next one.

'We are often asked why we didn't fly above the fog. Excellent idea! — except for the following reasons: we did try to climb out of it, but the fog apparently had no ceiling, while, with the extra heavy load of gas and oil we were carrying, about eight thousand feet was as high as we could go. Moreover, some of the mountains along the Greenland coast rise to eight and ten thousand feet. So had we climbed to our limit there still would have been plenty of room for us to crash into the top of one of those mountains, just as Major Martin had done in Alaska. Our best bet was to keep low, just above the water, where the fog was thinnest and where we had at least a Chinaman's chance of seeing what was ahead and of then dodging it.

'But finally, what we feared would happen, did happen. Diving through a small patch of extra heavy fog that was clinging close to the water, we emerged on the other side to find ourselves plunging straight toward a wall of white. The New Orleans was close behind us, with that huge berg looming in front. I banked steeply to the right, while Erik and Jack swung sharp to the

left. "Les" shouted, "Hold on! — God!" — and I'm sure I did some rapid praying, myself. Both left wings seemed to graze the edge of the berg as we shot past it. And in far less time than it takes to tell it the two planes were lost from each other.

'But neither of us dared circle around and look for the other. When you are in a fog, traveling at ninety miles an hour, don't ever start looking for an airplane, because you are likely to find it much sooner than you like!'

When we got back to Fürth-Nürnberg aerodrome the *flugplatz* commandant assured us that there would be no chance to get through to Leipzig and Berlin before the next day. So we drove into the old walled city and rested up that night at the Grand Hotel near the Bahnhof. On the news-stand I picked up a copy of the Paris edition of the 'New York Herald' that had just come in. There on the first page, in heavy black-faced type, was the following heading:

PARIS–BARCELONA
EXPRESS IN CRASH
FIVE DEAD, 30 HURT

Fast Flier in Collision with Goods Train

SCENES OF PANIC

Then followed a harrowing account from Perpignan, in southern France, of how the express had crashed into a freight train at a speed of more than fifty miles an hour. The engine

and tender and the baggage coach had climbed over the standing train, while the next two coaches were telescoped. This story took the edge off the lingering thrills left by our little adventure in the fog over the Thuringian Forest. In comparison with that railway smash the average airplane accident is a minor affair.

Next morning the porter knocked on the door at seven-fifteen and told us that the *flugplatz* commandant had just 'phoned that an auto-bus would pick us up in an hour. When we got to the aerodrome there were no signs of fog, but a high wind was sweeping across the plateau. A Fokker that had just come in from Dresden took off while we were standing by the hangar. But in ten minutes it was back again. During that time it had hung almost suspended in mid-air above the flying-field, and when the pilot got down he told us that the wind blowing from the south was so terrific that he had been unable to make the slightest headway against it. His ship could make about ninety miles an hour with the throttle wide open, which meant that the gale was blowing at about that speed. Otherwise he would have been able to make some progress. Our pilot chuckled at this news and said the wind would be an advantage to us because we were going to travel right along with it.

At nine-twelve we are off, and we soon discover what a terrific gale we are riding. However,

things are not quite so lovely as the pilot prophesied. While we want to fly due north, the wind is blowing from the southeast. As a result he is obliged to point the nose of our Dornier Comet to the east in order to hold her to her course. This means we are traveling through the sky in a curious manner. With our nose pointed east, and our tail flung toward the west by the gale, we are sort of sidling through the air. Every few minutes an extra stiff gust hits us and we are thrown for fifty feet or more just like a feather. It actually seems as though we are being carried away off our course, but the pilot looks back through the window and laughingly reassures us that all is well. At eleven o'clock we drop down on the outskirts of Leipzig, the city of furs.

Here we spend the afternoon going through the great fur market of Europe in company with Mr. Hernando de Soto, the American Consul and the general manager of Adolph Schlesinger Nachf, one of the largest firms. Herr Walter Koenig is a walking encyclopædia on the subject of furs. He has trapped animals and traded for furs in nearly every corner of the world. He has bought skunk skins from the trappers of the Upper Peninsula of Michigan. He has haggled with the weasel catchers of China. He has bought house cats from the Icelanders, ranger seals on the Labrador, wallaby and kangaroo skins from the Billjims of the Never Never Country of Australia, polar

bears and white foxes in Alaska and Spitzbergen, Russian sables in Siberia, caraculs from Tatars of Turkestan, and monkeys from the tribesmen of Central Africa. So he ought to be an interesting character, and he is. Everybody in the world who has much to do with the fur industry knows jovial Walter Koenig.

He led us through great rooms where tens of thousands of pelts hung from the walls and beams. By simply rubbing his hand over a fur he could tell you within fifty miles of the spot where that animal was caught. For instance, he picked up one skunk fur and said it was from New Jersey, another from Michigan, and another from Illinois. More miraculous still he could even tell whether a skin came from southern Michigan or from northern Michigan. I asked him what advice he had for a woman who wanted to buy a fur and get the best skins instead of the poorer grade. He said there was only one way and that was to go to one of the largest and most reliable firms. He said that it was even more important for a woman to shop for furs in this manner than for her to do so when buying pearls or diamonds. When I asked him if Leipzig was still the chief fur center of the world as it was before the War, he replied that the fur business had grown in such a phenomenal manner during the past fifteen years that every continent now had several great fur markets. But he added that there were four

principal centers: London, New York, Leipzig, and St. Louis. He said that by far the best dyeing is done in Leipzig and New York.

Some months before, a friend of mine had proposed that we return to Alaska, where we had known each other many years ago, and attempt to build up an Alaskan replica of the vast Hudson's Bay Company of Canada. Herr Koenig told me that he thought the day of fur companies like the Hudson's Bay had passed. He said it was a game that naturally split itself up into small units because all any individual had to do in order to go into the fur business was to fill his pockets full of cash and then sally out into the great open spaces and buy furs direct from the trappers, and that the little fur dealer was cutting in heavily on some firms like the Hudson's Bay Company by doing just that, going directly to the field and offering a few dollars more to the trappers. He added that the industry had grown so rapidly that there were hosts of scalawags in the game.

Next morning at eleven-fifteen we take off on the last leg of the flight to Berlin. A stiff wind is still blowing from the southeast, so we are making tremendous speed. Down there is a curious blue lake whose waters are of a different shade from any I have ever seen, evidently because of that great chemical works on its shore. At eleven-forty-five we come in sight of the Elbe with its

scores of steamers, tugs, and barges. The landscape is so much the same as a lot of the rest of Germany that my wife and I have been reading most of the time on this flight. We have torn 'Stalky & Co.' in two and while my wife reads the first half I read the second. At twelve-four we pass over Wittenberg, 'the cradle of the Reformation,' where Martin Luther first published his translation of the New Testament and burned the Papal Bull. The altimeter here in the cabin, an instrument installed for the benefit of passengers, registers less than zero. But this is not the Jordan Valley. Instead of flying below sea-level we are still eight hundred feet or so above the ground, and at twelve-thirty we make a perfect landing at the finest commercial aerodrome in the world, the Tempelhof Field within the city limits of Berlin, where the Death's Head Hussars used to goose-step before the All Highest. We taxi up to a concrete platform in front of the spacious main offices of the Deutsche Luft Hansa, where a roomy open car with motor running is waiting to speed us to our hotels.

CHAPTER XVII

THROUGH MIDNIGHT SKIES ON THE WAY TO RUSSIA

Of all the flights we made in Europe there was one that we looked forward to more eagerly than any other — from Berlin to Moscow. There were many reasons for this. In the first place, it was by no means easy to get permission to make the flight at all, and it was not until three months after we had sent our applications to the Soviet Government that a courier arrived from Moscow with the official news from the Bolshevik Foreign Office that we could come.

The journey was also to involve our longest continuous stretch of flying, and we had been told that we should cross great areas of sparsely inhabited country where a forced landing might be decidedly inconvenient. Much of the time, indeed, we should be over regions where a plane could hardly get down without standing us on our heads in a bog. Then, too, the idea of leaving Berlin at night, making part of the journey through the darkness, and reaching Moscow, nearly fifteen hundred miles away, in sixteen hours or less, seemed like being whisked across Europe on a magic carpet.

From the time we got our passports stamped at

OUR FIRST GLIMPSE OF LEIPZIG AND ITS MASSIVE WAR MEMORIAL WAS A WELCOME SIGHT

TEMPELHOFERFELD
One of the finest sky harbors in the world

the Soviet Embassy on the Unter den Linden until we entered the plane at Tempelhof Field, our pulses beat quicker than they had for a long time. At last we were going to Moscow!

Russia was one of the few countries in Europe we had never visited. As with nearly every one else in the world, to us Russia had long been a land of mystery, a vast, half-empty empire with lonely rivers flowing toward the Arctic, mile after mile of virgin forest, strange cities with barbaric palaces and bizarre cathedrals, Cossacks and droskys, fierce, bearded men in tall boots gulping vodka, while dainty Pavlowas went through the mazes of the ballet dance to the strains of Stravinsky's and Scriabin's wild music. To us it had been a country ruled over by merciless Czars, giant Grand Dukes, plotting priests; a land of icons, pop-eyed nihilists holding bombs with fuses spitting fire, and mysterious trains crowded with sunken-eyed prisoners starting for the coal mines of Siberia.

Then came Red Revolution. Since that time we had read reams about the street battles in Leningrad, the Bela Kuhn massacres in the Crimea, the nationalizing of women, Lenin's bloodthirsty Mogul guards, and of starving, parentless children living like human rats. Now, at last, we were about to realize our dream. In a few more hours we should be on our way to Russia, rushing through the skies at a hundred

miles an hour, with Moscow as our destination. The witching hour of two A.M. was the schedule time for the departure of the plane. Getting any sleep before then somehow seemed out of the question. Anyhow, we had both become so accustomed to flying that we were sure we could snatch a few winks along the way. So we spent the evening at the opera listening to 'Lohengrin,' while in fancy we were already flying toward the blue domes and somber walls of the Kremlin. After a midnight supper we taxied out to Tempelhof, arriving there a half-hour before time to take off. At ten minutes to two our baggage was weighed and we were weighed. Then we were led across the field to the concrete platform where a mighty three-engined Junkers plane stood ready to whirl us through the night across the hills and forests of Prussia to Danzig, our first stop.

Although there were seats for nine passengers in the cabin, we were the only persons making the trip. Punctually at two A.M. the aerodrome attendants pulled the blocks from beneath the huge wheels, and with fire shooting from our exhausts we sped across the Kaiser's old parade ground and a moment later soared over the roof-tops of the sleeping city. The street lamps gave off enough light to enable us to pick out the silhouettes of such familiar buildings as the old Imperial Palace on the Spree, and the dome of

the great Lutheran Cathedral just opposite. It was a cloudy night. But moon or no moon we had already made so many journeys in Junkers planes that we had perfect confidence in this multi-engined one, and then, too, we knew that before very long the first faint light of approaching dawn would enable our pilot to pick out a field in case he was obliged to interrupt the flight.

We have both taken seats right up in front of the cabin, on either side of the aisle, where we can look through the little forward window and amuse ourselves until daylight by watching the instrument board in the cockpit. Fifteen minutes after leaving Berlin the altimeter needle has swung around to number one, indicating that we have climbed to a thousand feet above sea-level.

The first leg of the journey from Berlin to Moscow is to Danzig, with other intermediate scheduled stops at Königsberg and Smolensk. At present there are no beacons under us to guide us on our way through the night. But before these lines are off the press, the German Government will have placed a series of night beacons along this route like those between London and Paris, where every few minutes a beam of light stabs the darkness making it difficult for a pilot to lose his way.

Between London and Paris are powerful aërial

lighthouses. And in addition to these at regular intervals the principal aerodromes, like Croydon and Le Bourget, are equipped with extra powerful flood lights, also flashing lights around the boundaries of the aerodromes, and then red lights on all the buildings, trees, and poles to prevent planes from running into them.

Nearly all of the more important European air lines have been conducting night-flying experiments for several years. The French have done much cruising through nocturnal skies across the Carpathians on the run from Belgrade to Bucharest, with planes that carry special lights to prevent collisions in the air.

Two-forty A.M. According to our map we are now above a vast forest, but even if we were crossing over a mountain range we should be unable to distinguish it on account of the darkness. The pilot hopes to make fast time because the weather report received just before starting indicated that we should have a following wind all the way.

Watching the instrument board in the pilot's cockpit becomes a bit monotonous, and we nod in our seats. I was in the middle of a comfortable nap when my wife nudged me. I looked. What did it mean? Flying through the darkness under any circumstances gives you an eerie sort of feeling. But when I stared out, I was fairly bewildered. Were we in an ice boat on some

ghostly Arctic field? What had happened was that our pilot had run into a cloud-bank, which extended down close to the ground. So he had climbed up through it and we were now scudding along above it. I had flown over clouds before, but had never seen anything like this. The moon had just come out from behind a still higher cloud mass and was shining on the white floor: a magical carpet of gleaming mist and moonlight that stretched away to the horizon on every side. To any one fond of sights of eerie grandeur let me recommend the view from an aeroplane flying over clouds in the moonlight.

'All the earth and air
With thy voice is loud,
As, when night is bare,
From one lonely cloud
The moon rains out her beams, and heaven is overflow'd.'

I wonder when this new flying game will produce its own Shelley, some poet able to describe these marvels of sky and earth recently revealed to the eyes of man?

At three-thirty the mechanic slides back the little window, shouts to us, and points to the east. Over the distant edge of the cloud floor it is growing light. He calls something about sunrise. I can understand readily enough. The sun will be up in a little while. We are bowling along nearly a mile above the earth and in these northern latitudes sunrise comes early. With this

snowy prairie around us it promises a glorious spectacle.

Ah, here it comes, and it is even better than its promise. A fiery gleam darts forth. The dull gray dawning sky turns to glowing crimson. The red ball edges its way above the rolling cloud continent, and spreads its riches of red and pink upon the milky sea. It is like a ruddy lamp standing at the edge of a snow-white counterpane, only infinitely grander.

'To watch at dawn
The earliest sunbeam kiss
The mist-drowned, towering peaks
And glide down to the plains: —
Ah, that is life!'

'Why, it's just like sunrise from the top of Pike's Peak!' my wife exclaims, 'or from Tiger Hill in the Himalayas, only this is far more marvelous because one view follows another just as it would if one could leap from mountain-top to mountain-top.'

I nod assent, wondering what strange transfiguration this earth in the sky will undergo next. Soon the sun is fully risen and our eyes are flooded with the dazzling whiteness as our plane skims on toward Moscow.

'In the golden light'ning
Of the risen sun,
O'er which clouds are bright'ning,
Thou dost float and run,
Like an unbodied joy whose race is just begun.'

This layer of clouds beneath our glistening duraluminum wing is different from any we have ever seen. Instead of looming up in vast, fluffy billows with valleys in between, it is perfectly level. We are rushing through the sky fifty feet or so above a dazzling surface as flat as the great plain of Russia, as flat as a glassy sea. It looks as solid as a field of ice coated with a light cloak of freshly fallen snow.

'It seems,' my wife spoke into my cotton-filled ear, 'as though one might climb out of the window and go skiing off to Russia.'

For miles on end we race across that fairy ballroom, where the spirits of the air are dancing before the whirring propellers of our Junkers, which has burst on them from below like some roaring demon of the underworld.

It is five o'clock now and Danzig surely is not many miles away. The pilot leans forward on his control wheel. In a flash the blinding sunlight has turned to flat white mist. We are plunging down through the clouds and are immersed in dense fog. Just as we are wondering how long this will last, the earth appears below. We are flattening out again, and there right up ahead are the distant waters of the Baltic. Our pilot knows his route well. Shaping his course by compass and reckoning with his speed, he has nosed down to within a few miles of his goal. We are flying along just under the clouds. In fifteen minutes

we see the square tower of the cathedral, the principal landmark in the center of this ancient Hanseatic city, now the seaport for new Poland and in the commercial doldrums.

The landing-field here at Danzig is on the southwestern edge of the city, and we stop for only a few minutes, long enough to climb out of the cabin, stretch our legs, and get a Polish stamp on our passports while the pilot reports to the aerodrome officials. Then at five-thirty, five minutes ahead of schedule, we skim across the turf, climb into the air, and head toward the sea.

Reaching the shoreline we bank and turn east. Under us now are vast lumber yards and a large island with two branches of a river encircling it. Great rafts of lumber line the river, which according to our maps is one of the many mouths of the mighty Vistula, a great waterway of eastern Europe which rises six hundred miles to the south in the Carpathians, passes through Warsaw, and drains two thirds of Poland on its way to the sea. Five minutes later we look down on the Gulf of Danzig and then cross over another of the wide mouths of the Vistula. This delta region reminds me of the lower Mississippi and also of the delta of the Irrawaddy in far-off Burma. I can count at least a dozen spreading arms of the Vistula, off to the right, and the waters of the Gulf beneath us are so placid that not even a ripple can be seen from up here

at fifteen hundred feet. Fifteen minutes from Danzig we gaze down on a curious peninsula known as the Frische Nehrung. It runs out like a jetty, looks as though it is about two miles wide, and is covered with a dark forest except for a stretch of beach on either side. Somehow in flying one's thoughts dwell much of the time on the character of the country below and its suitability for landing an airplane. Even the average pilot's thoughts run along the same line. However, this is not quite so important when you are in a three-engined plane, assuming, of course, that it is a plane able to carry on with any two engines in case one happens to sputter and pass out.

We have ascended to twenty-two hundred feet, and now the speedometer registers one hundred sixty kilometers, or exactly one hundred miles per hour. Beneath us is that same long, sliver-like peninsula, to our left the Gulf of Danzig with the Baltic beyond, and to our right the Frisches Haff, the muddiest body of water I have ever seen. It is from five to ten miles wide, fifty miles long, and cut off from the Gulf by this amazing jetty of land. Its color comes from the silt carried down by the many rivers that pour into it.

The clouds seem to be clearing now. It is five minutes after six. Nearly all this time we have been flying above the long peninsula. But we are

leaving the tip of it now and heading straight across the Frisches Haff, with Königsberg somewhere on the other side. A little way off to our left is the town of Pillau built at a point where a narrow channel leads from the muddy Haff out into the blue Gulf. The pilot has taken us up to just over three thousand feet and we are following a long sand-bar which extends to the east. Although the bar is not more than a hundred yards wide, it runs for several miles marking the channel of the Pregel River which empties here.

At six-twenty-five we reach the mainland once more and bowl along above prosperous-looking farming country and splotches of forest. There are hundreds of fishing boats with red and white sails down there along the shore, evidently just setting off to inspect and empty the rows and rows of traps and fish nets where those stakes are sticking up above the muddy water a bit farther offshore.

This Danzig–Königsberg leg of our Berlin–Moscow flight is quite a short one, and in less than an hour we see the outer earthenwork forts of the capital of East Prussia, the great military center where we are to change planes. Königsberg is a city of the plain, built on the north bank of the Pregel. There is not a hill in sight, and the bright red roofs of the houses suggest that modern Königsberg has been built within the course of the past few generations.

We descend rapidly after we pass over the heart of the city, and at six-thirty-two we drop gently onto a bright green aerodrome as level as a billiard table and one of the largest and finest parking-places for flying-machines that we have ever seen. In war days Königsberg was one of the great mobilization centers in the campaign against Russia. The Prussians did themselves proud when they made this glorious aerodrome. Lindbergh with his trans-Atlantic plane would have no trouble getting off here with a full load. It is perfectly flat and unobstructed in every direction, pleasantly unlike some of the cow-pasture aerodromes I have come down on in America, and also over here.

CHAPTER XVIII

OVER THE BALTIC REPUBLICS TO SMOLENSK

THIS is Thursday the 13th — not Friday. I don't suppose it matters much, but it is just as well not to have the gods of the superstitious against us on this jaunt from Königsberg to the land of the Bolos. We've a three-hour jump ahead of us over Lithuania and Latvia and then across a fairly wild stretch of Russia to Smolensk.

After a breakfast of coffee and rolls in the *flugplatz* café, we go over our maps with the commandant and at seven-thirty A.M. he ushers us up the steps into the cabin of a big, roomy Fokker, a type of plane totally different from the Junkers. Our engine this time is a 400 H.P. Rolls-Royce with a double set of propeller blades. Promptly we are off and flying over the East Prussian plain, which they tell us extends all the way to Moscow.

My wife and I are the only passengers, or think we are.

'Hello there!' I hear her exclaim. 'Look who's with us.'

A large insect, half the size of a locust and much like one, seems to have been shanghaied

aboard. Or is he a stowaway bumming a ride to Smolensk? Look how he gropes along the edge of the window, apparently puzzled by the transparent barrier. He seems bewildered, too, by the tremendous vibration. Well, Mr. Insect, if the throbbing of this 400 H.P. motor doesn't shake your fragile wings to dust, you are likely to find yourself in darkest Russia, among strangers, ere the sun's decline. Unlike poor mortals who are tied hand and foot by red tape, he is not required to show a passport with a Soviet visa. Nor will he be bothered by officious customs inspectors going through his baggage in search of firearms, tobacco, and dope, both of the opium and propaganda variety. And what of the family and friends he is leaving behind in Germany? Or do insects have any of these? If the Hindus are right, who knows but what this grasshopper-aviator may not be Icarus himself?

At seven-forty-five we cross quite a big stream called the Deime, which flows due north from the river Pregel into the Kurisches Haff.

'Look at the ship down there,' I call to my wife. 'It seems to be stuck on a sand-bar.'

We are flying over enormous stretches of forest, more forest than cultivated land, but there is nothing to suggest that we are nearing Russia. The farmhouses and Dutch windmills are the same as all over North Germany.

This is historic ground over which we are

flying. Below are the manor houses and well-tilled fields of the East Prussian gentry, the Junkers, the old tough northern clans that are the backbone of Prussia's military power. Königsberg, where we boarded this Fokker, was the old capital of Prussia, a wealthy stronghold when Berlin was an obscure village. Teutonic Knights, Napoleon, Hindenburg — these names mark the high spots of history in this region.

It was the Teutonic Knights who built this stronghold of Germanic power. We see an ancient castle below, a decaying fortress of those ancient crusaders. Originally formed, along with the Knights Hospitaler and Knights Templar, for the defense of the Holy Places of the East, the Teutonic Knights were diverted to a crusade against the heathen in the North, the Slavonic tribes of the Baltic region. There they carved out a principality for themselves, which in time expanded and became Prussia. South and a bit to the west of where we are flying now lies Tannenberg, not only of recent but also of ancient fame. There Hindenburg and Ludendorff won their first great victory, and there many centuries earlier the Teutonic Knights were beaten by the Polish and Lithuanian hosts, and thus was checked their further expansion into the lands of the Slavs.

Over there to the north of us is Tilsit. Running around a coming bank of rain clouds our pilot

has swung us over to a long, winding stream, the river Niemen. Right down here it was that two Emperors met on a raft, Napoleon of France and Czar Alexander of Russia. Napoleon had beaten Prussia at Jena, and was bent on wiping out its last resistance. He rode into Berlin, and the King of Prussia retired to the old home of his race here in this eastern plain. But Napoleon swept down on him. Danzig, which we visited at dawn this morning, fell after a hard siege. Only Königsberg, the ancient capital, was left to the Hohenzollern. That fell, too, and Prussia was wiped out. But the Russians were in the game, and Napoleon had to fight one of his longest and bitterest campaigns up here in this northern country of marshes and lakes. Then, after the victories of Eylau and Friedland, the Russian Emperor, Czar Alexander I, turned to thoughts of peace. The lines of the opposing armies faced each other along the banks of the river near Tilsit that day, and had we been flying up the Niemen in this Fokker we should have looked down upon one of those splashes of pageantry that have been staged at times when powerful monarchs have met to negotiate. Napoleon and Alexander here staged a second Field of the Cloth of Gold. A magnificent raft was moored in the river. To the blare of trumpets and thunder of guns, the Emperors of France and Russia, with ministers and attendants, set out each in a boat

from his own bank. On the panoplied raft the destiny of Europe was decided, supposedly for a long time to come. But within five years the fat was in the fire again, and Napoleon was advancing on Moscow by way of this same plain, and via Smolensk, which is to be our next stop.

On this flight from Königsberg across East Prussia and the Baltic States, we pass over many battle-fields of the late war, especially of the fall of 1914. The region off here on our right was the scene of a bit of daring strategy but for which the Allies might have won long before they finally did. If von Hindenburg and Ludendorff had not so decisively crushed that early Russian advance into Germany, which took place while the rush for Paris was on, the weak German forces in the East might have been beaten by the Russians, heavy German forces might not have been available for France, and the advance on Paris might have been rolled back more decisively, and so on.

The clouds have grown heavy again. We soar up and above them, and once again we are winging our way over that fairy ballroom. It is even more wonderful than before. My wife and I go to the windows at the other side of the cabin, the better to see a racing shadow on the cloud floor. It is one of the rarest sights known to the traveler of the air, and one which the airman considers the happiest omen. The angle of the sun is such that

AFTER A NIGHT FLIGHT ABOVE A FAIRY BALLROOM FLOOR WE MAKE A STOP AT DANZIG ON OUR WAY TO RED RUSSIA

THE FLYING-FIELD AT KOVNO, THE CAPITAL OF LITHUANIA, IS SO SOGGY THAT WE ARE OBLIGED TO CANCEL OUR STOP AND FLY STRAIGHT ON TO SMOLENSK

the shadow of the plane is thrown clearly on the clouds, and by some strange prank of the sunbeams, it is encircled by a great halo of gold. Perhaps it is because of some prismatic action of light passing through the streams of air and vapor set in motion by the plane. Whatever its cause, the shadow with its golden halo is a bewitching thing to see. No wonder it is considered a sign of luck! It seems to say, in the language of symbols, that we are haloed by fortune, just as our shadow is haloed by its golden, violet, and purple crown. Since we are making the long Königsberg to Moscow flight behind a single engine, this happy omen could hardly have greeted us at a more auspicious moment.

We have still another companion in the cabin this time — a member of the crew. On most of our other journeys the mechanic sat out in the cockpit beside the pilot, but the system is totally different in this huge Fokker. The cockpit is only large enough for the pilot whose right shoulder rubs against the hood of the big Rolls-Royce motor. The mechanic, sitting with us in the cabin, is able to open up a large door and thus inspect the motor at any moment. He does this quite often, much to our distress, because every time the door swings back we get an extra dose of castor-oil fumes.

This part of the air line between Königsberg and Moscow is called Deruluft. It is controlled

jointly by the Russians and Germans. Each nationality is represented by a director. But the pilots and mechanics are all Germans. The two nations are planning a system of airways to cover all of eastern Europe and most of Asia.

Nor is this mechanic any youngster. Indeed, he looks to be a man of forty-five or more, and is almost totally bald. He is a cheery soul and most solicitous about our comfort. A moment ago he reached into a pocket at the side of the cabin, pulled out a paper sack, opened it, and handed it to my wife. These paper bags are the equivalent of the basins so wisely provided for passengers on steamers crossing the turbulent English Channel. Because we are sitting right on top of it, the noise of the motor is even greater in this plane than in any of the others in which we have ridden, and this makes it more difficult than usual to talk. When I laugh and indicate by signs that my wife is not troubled by airsickness, he shakes his finger slyly and smiles knowingly, as much as to say, 'You can't kid me.' We have a long flight ahead of us before we reach Moscow, and with all these castor-oil fumes wafted back from the motor perhaps he's right.

Eight A.M. We have slid down through the clouds again and are back in view of the world of men. Under us is a vast plain of rich farmland. In another five minutes we come to a marshy belt that stretches for miles both to the north

and to the south. The past winter was accompanied by an extra heavy fall of snow, and now that the spring thaw is on, the landscape is dotted with even more pools of water than usual.

Eight-fifteen. The bald-headed mechanic has just opened his trapdoor again for another squint at his humming machinery. In comparison with what you see when you turn back the hood of your automobile, this Rolls-Royce seems to have as many tapping, whirling parts as a machine shop.

Ugh! That makes our second dose of castor oil!

This small land of East Prussia over which we are still flying, although a part of the German Republic, is now isolated from Germany by the Danzig Corridor, but when the World War broke out it was an unbroken neck of land extending along the north of the Russian province of Poland. The present Danzig Corridor was then a part of East Prussia. Similarly, stretching along the southern boundary of Poland was Austrian Galicia. The Russian plan, on the outbreak of the World War, was to march across the western boundary of Poland into the heart of Germany, but if they did this at once, their lines of communication would be threatened from East Prussia and Galicia. From these two outlying points, like the tips of a crescent, armies of the Central Powers could sally forth, one moving

south and the other north, and threaten to trap any army marching west into Germany. The first Russian task, in 1914, was to clear the two necks of hostile territory, East Prussia and Galicia. Their first rush was into East Prussia.

The Germans had the great majority of their men and guns employed in the advance on Paris. Only a few could be spared to hold back the Russians. The Russian mobilization and advance had been much swifter than the Germans had expected. The regiments of the Czar poured into all this region over which we are flying. The German defending forces were everywhere beaten. As we look down on this flat country, we can imagine the scenes that took place in those days of autumn, 1914. Those neat lines of roads between wide fields were thronged with people flying before the Cossacks who advanced into the country with swift dashes. Just imagine those old Prussian barons, the stiffest-backed, haughtiest autocrats of their race, scurrying along, chased by the wild horsemen of the steppes. Fancy their indignation! Where was the invincible German army? The Russians arrived before Königsberg. Consternation reigned in Berlin. People already saw the Cossacks riding down Unter den Linden. The Kaiser and his military chiefs regarded the problem gravely. Even outside of the military danger of the Russian advance, there were

political elements to be considered. The Russians simply could not be allowed to storm the ancient Prussian stronghold like that. The Junker barons who commanded the German army could not patiently see their kinsmen chased so ignominiously by the Cossacks and these rich lands of theirs overrun. Something had to be done. But what? No large force of soldiery and artillery could be spared from the advance on Paris. The only resource was to depend on superior strategy and organization. An old retired general, who was unknown to the public and not even mentioned in the German 'Who's Who,' had made a study of the East Prussian fighting ground, and he was summoned. His name was Paul von Hindenburg, now President of Germany. He was given as his chief of staff Erich von Ludendorff, who had made a reputation as an organizer at the siege of Liège. They went East to improvise the strategy that would save the country from the Russians.

The situation that confronted von Hindenburg was a difficult one. This corner of Germany across whose skies we are racing was a salient thrust out into hostile territory, with the sea on one side and Polish Russia on the other. The Russians were using the strategy customary in such cases. It was somewhat the same as that of the Americans at Château-Thierry — to drive into a neck of enemy territory at its base and

threaten to cut off the main body of defending forces. Two Russian armies were operating. One, under Rennenkampf, was advancing into East Prussia from the east over these same roads. The other was coming up from the south to act as the nipper of the pinching, outflanking strategy. They were to join hands and, with the constant threat of cutting the Germans off, sweep them out of the country. Von Hindenburg's strategy was much the same as that which Napoleon tried at Waterloo — to strike at the junction point of two armies, separate them, and roll one of them up, while holding the other with a minimum of forces. The German general's difficulty was the small size of the army at his disposal. It was much inferior to the Russian two armies. He resorted to a daring gamble.

Back there at those lines of grass-grown fortifications, that we saw when we flew out from Königsberg this morning, was where Rennenkampf's army stood at the gates of Königsberg and where the Germans were holding it off. Behind it, to the south of the country over which we have flown, Samsonoff was striking swiftly north for the pinching operation. In those autumn days thirteen years ago an astonishing movement of soldiers might have been witnessed from an observation airplane. You might have seen the German forces facing Rennenkampf's army before Königsberg marching swiftly to the south.

Hindenburg left only a small force, chiefly of cavalry, to hold the lines in front of Königsberg. If Rennenkampf guessed the German plan and attacked, that puny line of defenders could never hold, and the Germans were ruined. But Hindenburg played out his hand on the chance that the Russian general would not outguess him. If Rennenkampf had had aeroplanes to fly over this country as we are flying over it, it would have been a different story. But in that early day of the world conflict, the war in the air was still a year or so away. The Russians before Königsberg still thought that they were holding a large part of the German army, and waited for their comrades to strike and make the pinchers work.

And now tremendous marches are being made. Samsonoff's army is pushing up from the south. Before him the Germans are strong enough to hold him when the time comes. The divisions that had faced the waiting Rennenkampf are plodding day and night on through the blind gap between the two Russian armies. Cannon roar along the line. The battle is on. A line of fire advances on Samsonoff from the front. The army that has pierced the gap strikes at his rear. If you look at an ordinary map you will see that the Russians have still a large gap for a retreat southward, but if you fly over the country you will see a maze of marsh, the Masurian Lakes

just south of our Königsberg–Moscow air route. Hindenburg knows this country. It was his special study, his hobby throughout his whole military career. With a terrific bombardment of steel he is herding the doomed Russian army straight onto the marshy net of lakes. The Russian army unable to cross the marsh is destroyed. The Germans take seventy thousand prisoners. It is nearly all over before Rennenkampf learns of what has occurred. By this time his own army is threatened with destruction by the victorious Germans and he beats a retreat.

Off there to the southwest of us is the little ancient town of Tannenberg. That was where the Slavs met the Teutonic Knights and beat them long, long ago. Von Hindenburg's victory seems to reverse that decision. The jubilant Germans name their triumphant victory the Battle of Tannenberg. Next to Allenby's final sweep through Palestine and Syria, it was the most complete victory on either side during the World War. Among other things it hastened the Russian Revolution.

This battle-zone on the Eastern Front, over which we fly, has a quality all its own. Stretching across vast lengths of flat plain, broken only by marshes and streams, the region is drab and dreary. The battle-lines in France were still more terrible, but they lie across trim fields and bright green hills. We look down, and see the

northern sector of the battle-field on which horror reigned from that early East Prussian campaign on to the Bolshevik Revolution. We see it as if in slow movies. The Germans rush across toward Warsaw, and go back as quickly. Again the German line surges forward and goes back. The Russians beat the Austrians and overrun Galicia farther south. But now the Muscovite line is smashed at the southern angle by the hammer strokes of von Mackensen, and the millions of the Czar are reeling. The German line bulges swiftly with a great spear-point, then moves forward all along until it is beyond Poland and into Russia. There it stands, a straight line from the Baltic Sea to the Rumanian mountains. Russia is pounded to her knees. She makes a few final convulsive efforts. Her line advances a little in a place or two. Then her map turns red, and the Bolshevik terror grips her.

The scene over which we are flying changes a bit now and the church spires of that village down there, instead of running straight up to a point, are more bulbous, showing Russian influence. This first town, according to our map, is Pillkallen.

A half-hour has flashed by and for a change we haven't flown over a single forest. My wife points to the white objects on the ground in front of nearly every house. This must be washday in East Prussia. Instead of hanging the

clothes on the line the housewives in this part of the world spread them on the grass.

At eight-twenty-five we cross a small river. On this side is Germany, and then in the twinkling of an eye we are in Lithuania. On the German bank is a town with the typically Germanic name of Schirwindt with its Western church spires. On the opposite bank is a town with the unpronounceable Lithuanian name of Wladiblawow. The name of the stream is a sort of compromise between the two languages. It is Scheschyppa.

Although the sun is shining and it is a glorious day, there is a light filmy haze rising from the earth, caused by the evaporation of all this water. The plain is spotted with countless thousands of pools, ponds, and nameless streams that wind in every direction. The country grows wilder and more sparsely settled. I wonder if the Lithuanians, in pre-war days when they were subjects of the Czar, were encouraged to undertake scientific farming and draining of lands? At any rate, we have come only a few miles from Germany, we are above the same plain, and the difference in the appearance of the landscape beneath us, and what we beheld in Germany, is startling. Up ahead now is the first large forest we have seen, and as we cross the dividing line where the farmlands cease and the trees begin, we get a terrific bump. It is nothing much, though. Our

mechanic has just pulled out a package of chewing-gum, something to pass away the time. So evidently aviation is going to break down another international prejudice and bring about the introduction of this charming American habit until recently so frowned upon in Europe.

Eight-forty-eight. We have dropped down until we are only a few hundred feet above the ground and here right ahead is the junction of the wide Niemen River and the Viliya. On the tongue of land right where they join is the Lithuanian capital, the city of Kovno, which occupies both banks. We have Lithuanian visas on our passports and this is one of our scheduled stops, but the aerodrome here is still too soggy and marshy, so we are to continue right on over it. A half-dozen big river steamers are tied up to the wharves at the foot of the high banks of the Niemen. The buildings in the business section look modern and substantial. But the residential streets are lined with unpainted houses. Kovno is a city about the size of Trenton or Spokane, and a third of its inhabitants are Jews. As we skim over the aerodrome the mechanic pulls a small bag of mail from under his chair, tosses it out the window, and we watch it tumbling toward the earth, wondering if it will hit the postal messenger on the head. It lands fifty feet away. In a big courtyard in the center of the city we see a troop of Lithuanian cavalry going

through maneuvers, their lance points glistening in the sun. A moment later we cross the river Viliya which flows into the Niemen on the outskirts of Kovno, and shortly we are above another large town, Janom, where the houses are still more primitive, all of unpainted lumber and with thatched roofs. Scores of log rafts floating down the river to the mills bring back memories of that never-ending procession of rafts of teak logs that we chunked past on the far-off Irrawaddy.

My wife has just handed me a note:

'So this is Lithuania? Well, well! Who ever thought I'd be here? Never heard of the country before. What is Lithuania — and why?'

I suppose not one person in a hundred knows the difference between Lithuania and Liberia. That I happen to be one of the exceptions is no fault of mine, for I once lived in one of the world's largest Lithuanian cities — Chicago. Prior to that, during my first year at college, I roomed next to a couple of Lithuanian chaps.

Until now that had been my nearest contact with the land five thousand feet below us.

The two Lithuanian students were splendid fellows, powerful physically and exceptionally good in their classes. Their eyes were slightly aslant, and they had a half-Mongolian look, like so many other peoples from eastern Europe.

Those college neighbors of mine were full of

national pride — despite the fact that Lithuania in those days was not a nation at all, but merely a Russian Grand Duchy like Poland. Many a time I listened as they told of the past glories of their country, of how it had been a powerful independent land in remote times, and of how it had given Poland its foremost line of kings. Poland's greatness began with the marriage of its Crown Princess to the Lithuanian King, Jagiello, which united the two nations. Jagiello and his descendants reigned over Poland and Lithuania for centuries and gave to Poland its great era of expansion. It was during the early period of their domination that the combined armies of the two countries met and defeated the Teutonic Knights at Tannenberg, on the East Prussian plain back there south of Königsberg.

The doldrums of Lithuanian history corresponded with those of Poland's. Both passed under the power of the Czar, only to achieve national independence once more with the Russian Revolution. They are not united now, though. The work of Jagiello is undone. Instead, they are at swords' points, and have been conducting a much-heralded wrangle over the city of Vilna.

This region under us now looks like a pioneer country, and not one bit like an ancient land with a history far older than ours. Just cast your eyes on that ferry down there at Janom. Why,

it's nothing more than a primitive raft attached to a wire cable stretched across the Viliya. Every house that we fly over now has a thatched roof.

After crossing a swamp and a short stretch of sandy desert, we come to another river with an unpronounceable name, the Szwjenta. The farmhouses now are all grouped together in little villages as in Yugo-Slavia. For protection no doubt. From up here the low thatched roofs look like native kraals in Africa, sometimes like haystacks.

Nine-twelve. Here we go roaring right up Main Street in Wilkomir, and then along what seems to be a great trunk highway leading over the horizon. Along it come carts and droskys, all drawn by horses wearing that curious arch of wood. Although we fly above hundreds of these primitive conveyances, so far we have not sighted an automobile along this main highway of Lithuania. Ah! at last! Here comes a lowly flivver. I'll bet it belongs to some Lithuanian bootlegger, or political boss, or a prosperous citizen who has made his pile in America. For mile after mile this white road guides us straight across the vast plain to the city of Novo Alexandrovsky, on the frontier between Lithuania and Latvia (Lettland), and then on in a bee-line to the Lettish city of Dvinska. After crossing more marsh and lake country we turn due east at

Novo Alexandrovsky and skirt around the corner of Poland. The Poles and Germans are not on particularly good terms, so instead of flying from Königsberg to Smolensk as the crow flies, we have to swing a bit north over Lithuania and Latvia, giving Poland a wide berth. It is just ten o'clock when we catch sight of the distant church steeples of Dvinska. Then a few minutes pass and we find ourselves looking down on the mighty Dvina River and its scores of rafts. We cruise above a picturesque town that rambles along the north bank for over a mile. Many of the houses have several acres extending in long narrow strips from the front door right down to the river-bank, much like the sugar-cane fields on the Mississippi above New Orleans.

This country looks peaceful enough from the air, but it has been the scene of many thrilling episodes. It was down here in this very locality that a Russian general was rescued from bandits several years ago. This general had escaped from Russia during the early days of the Revolution with about a million pounds sterling, Government funds, all in gold. He fled to Latvia and here he organized a counter-revolutionary army. Bandits were fairly common in Latvia during those first chaotic years after the fall of Czar Nicholas. Among the bandit chiefs was a Pole, who called his gang around him one night and proposed that they abduct the Russian general

and get at least a part of that tempting million in gold. So one dark night they kidnaped the old general and set off toward the Polish frontier, torturing him as they went, trying to get him to sign a paper that would enable them to get the gold from the bank where it had been deposited.

Next morning in the city of Libau, news rapidly spread concerning the disappearance of the general. His followers appealed in vain to the heads of the new Latvian Government. However, there was an American relief commission in Latvia at the time and the adventurous Yankees, organizing a regular movie posse, started off in hot pursuit. In the meantime the Latvians woke up, concluded that if the general were killed they might have trouble with his soldiers, and at best would have to feed them. Food was short. So the Latvians joined the chase and succeeded in rescuing the general when the bandits were within a few hundred yards of the Polish border right down here somewhere along the river Dvina which we are following. After that the general skipped off to England, where he is now living happily ever after on the interest from that million pounds!

Unfortunately, or fortunately, his army fell victim to a typhus plague that swept tens of thousands away within a few days. The plague merely prevented them from starving to death.

Ten-twenty. We have dropped from two

thousand to five hundred feet, probably to dodge a head wind. At any rate, here we are just in time to attend a Lettish (Latvian) wedding in a country churchyard. A hundred people or so are crowded around a couple and a black-robed priest in the door of a church. The peasants seem to have on some sort of national costume, and most conspicuous of all are the white caps of the women.

For a while now we follow the railway and on our right is the river Dvina. What squalid-looking towns these are! Somewhere just along here is the frontier between Latvia and Russia, and judging from the way the mechanic is making signs and grinning we must be just crossing into the land of the Bolsheviki. According to our map this railway will bring us out at the city of Polatzk, and that last town we saw on the right must have been the Russian city of Drissa.

Surely there has been a drought in this particular locality because we are passing over one forest fire after another, much like the swamp fires I have seen while flying along the edge of the Gulf of Mexico from Houston, Texas, to New Orleans. I recall counting a hundred different fires within ten minutes when I made that journey several years ago. In some places there is nothing but smoke, but every few minutes we pass a fire blazing merrily with a column of smoke shooting up for two thousand feet or more. We

have just flown over one stretch where the peasants are fighting the flames. Some are frantically digging trenches, too busy even to look up at our passing plane. Much as we regret the trouble these fires must be causing, there is no denying that they break the monotony of the flight and provide an impressive spectacle for argonauts of the air. My wife has just penciled me a note saying she has counted more than twenty fires, all within sight at one time.

Flying over these forest fires reminds me of an aërial journey I made with the U.S. Army Air Service World Fliers along the Pacific Coast, and a tale told to me one day when we landed at Eugene, Oregon.

Several years before he became famous as the commander of the first airplane flight around the world, Captain Lowell Smith was in command of an aërial squadron assigned to patrol the forests of Oregon and Washington. The timber of the Puget Sound country is one of the most valuable stands in the whole world and the losses from forest fires amounted to millions of dollars every year. So an attempt was made to cut this huge loss by having aërial observers 'spot' fires. Whenever Smith or his pals sighted a blaze they would immediately wireless the nearest forest ranger headquarters and the rangers would rush to the scene.

One day Smith was flying over this wild

mountainous region with a forest ranger in the rear cockpit as a passenger. It was a dual-control plane with a 'stick' in each cockpit. Part of the radio apparatus was outside on the lower wing of the biplane. While in mid-air something went wrong with it, and Lowell Smith, in his nonchalant, care-free way, turned the control of the plane over to the startled forest ranger, climbed out of his cockpit onto the wing, calmly adjusted the radio apparatus, and climbed back in again. The ranger had never had his hands on the control stick of an airplane before in his life and of course he was far more frightened than Lowell Smith.

Ten-fifty-three. We are flying a mile or so to the left of Polatzk, but near enough to note the old Kremlin and also to see that the town is quite an industrial and railway center, with five railway lines radiating out like the spokes of a wheel. Just as at Kovno, here, too, is a great ghetto. Rivers appear and disappear beneath us so rapidly that it is difficult even to keep track of them with the aid of our map. Aside from the forest fires, the most striking difference between the scene unrolling below us and the sights we have beheld thus far on our way from Königsberg is that we are now flying over one railway line after another. There goes a passenger train with eight coaches, perhaps the very train we should have taken had we chosen to make the

trip from Berlin to Moscow by rail. We talk about the startling difference in time between the aërial and railway schedules. The latter takes you from three to four days, sometimes longer, while the former is a matter of only fifteen hours. To fly from Berlin to Moscow the cost per passenger is three hundred gold marks, the equivalent of seventy-five dollars at the present rate of exchange, about what it would cost to travel an equal distance in America, from New York to Omaha, including Pullman.

Eleven-twenty-seven. We are crossing the Dvina again, and under us is the city of Vitebsk, the largest metropolis we have seen since leaving Königsberg. It spreads all over the plain, and has railway yards as extensive as you would see in flying over Indianapolis or Cleveland. By way of variety there are also a number of handsome buildings and three imposing white churches with their typically Russian bulbous domes. They are the Cathedrals of Saint Nicholas, Saint Anthony, and the Assumption. All through history it has been a frontier city and the scene of much fighting between Poles and Russians. In July, 1812, Napoleon passed this way with his Guards, headed for Moscow to teach Czar Alexander I a lesson.

From here on for a while we fly over much rich farming country, with a lovely little lake with two pretty islands off to the left, all sur-

rounded by pine forests. Here goes another one of those great trunk roads. From our flying crow's-nest it looks as if it might be paved with concrete, a sort of Lincoln Highway of Soviet Russia. But I suppose it consists mainly of deep ruts. If an automobile attempted to make the run from Vitebsk to Smolensk it probably would be shaken to bits.

We are leaving the road and the valley of the Dvina. The next great river now will be the Dnieper. As we approach Ljesno, we notice the first Dutch windmill we have seen thus far in Russia. The farms look greener, too, and the season seems to be much farther advanced. Here comes another stretch of uninviting swamp. The early morning ground haze has vanished now and the sky is filled with great billowy cloud masses.

The farm buildings in this part of Russia are built on the quadrangle style, with the house in one corner connected to the sheds and barns which form the other three sides of the square. All are thatched, and in the middle of the quadrangle, taking the place of the sparkling fountains and lovely flower-beds of Southern France or Spain, there is a huge manure pile. This whole plain now is sprinkled with these thatched quadrangles, so the land must be an exceptionally fertile stretch of the great Russian steppes.

Noon. Since leaving Berlin at two o'clock this

morning we have been in the air almost nine hours, and long as we have pored over our map we have not yet become accustomed to the Gargantuan names that mark nothing but microscopic villages. On our left over there is Wolokowaja and just a bit to the right is another burg named Jeroschowschtschina. Just think of an American chamber of commerce undertaking a civic booster campaign for an American town handicapped by a name like that!

Twelve-twenty. Here we are on solid earth again. Of all the landings that we have made, this was certainly shrouded in the deepest mystery. About the time we thought the spires and domes of Smolensk should be coming into view, the mechanic got up out of his seat and pulled down the cabin curtains. Then he motioned to us, indicating that under no circumstances were we to peek out. Fortunately his seat was right in front of us and when he slumped back the temptation was too great. We simply had to know what it was all about. Pulling the curtain aside, just a bit, and looking down, we saw the city a mile or so ahead; between us and the city an aerodrome. There was a row of hangars and in front of them a line of fighting planes. Smolensk evidently is the principal military air center of western Russia, and the officials in Moscow have given the pilots and mechanics on this air route explicit instructions

not to let passengers take photographs of this aerodrome or even get a look at it from the sky. The little that we saw could do no harm, but it at least satisfied our curiosity. Then we settled back and prepared for the descent. If you have never come to earth in an airplane with your eyes closed or blindfolded, you should try it sometime. It is indeed a curious sensation. You feel the plane tip and then start on its long glide. You are almost overwhelmed with curiosity to know how rapidly you are approaching the earth and whether or not the pilot is going to make a good landing. You trust his skill all right, but you would feel a lot happier if you could see what was going on.

With a gentle bump we touch the earth and taxi up in front of a group of one-storied huts. Before we even have time to unsnap our belts and climb out of the cabin, a glowering soldier in black hip boots reaches up his hand and in Russian demands our passports. While he looks at them skeptically and then pushes off to consult his fellows in one of the huts, we climb down the iron ladder which the mechanic leans against the fuselage and have a look around at the first bit of Russia we have ever trod upon. The flying-field is surrounded by fields and Smolensk is just over the hill and out of sight.

In front of us is a little frame canteen with the Red flag flying over the door. A young Russian

woman dressed like a nurse presides inside, and here under the protection of the Red flag we fortify ourselves with a decidedly meager meal. Apparently all she has is Russian tea in glasses, hard-boiled eggs, and hunks of bread and cheese. For this meal, which far from satisfies hungry flying visitors who have been up all night, we pay the equivalent of a dollar and a half each, more than it would cost for a banquet with several bottles of wine in many a European city.

Including the extra distance we had to cover in going around that northeast corner of Poland, we have flown a little more than nine hundred miles since leaving Berlin and we have two hundred and fifty more to make this afternoon before we land in Moscow.

CHAPTER XIX

FROM THE BLACK STEPPES TO RED MOSCOW

We had arrived in *purdah* and we took off in *purdah*. The Bolsheviks were so anxious that we should not get a panorama view of their aerodrome that the mechanic was obliged to pull the curtains of our plane again just before we took off for Moscow and he did not draw them aside until we had been out for nearly ten minutes. It did seem to us as though they were a little unreasonable in not even permitting us to get a look at the city of Smolensk.

When our bald-headed mechanical wizard at last pulled aside the curtains we hurriedly turned and looked to the northwest and were repaid by catching a fleeting glimpse of the turnip-topped domes and the great wall three miles long around the city with its lofty towers. I suppose the intent of the Soviet authorities was to prevent us from discovering the exact direction of the aerodrome from the city. Like so many other Government regulations, this seemed to be a futile precaution, because if a fleet of attacking airplanes ever came rushing through the skies toward Smolensk, it would approach at an altitude of fifteen thousand feet or higher, and from

up there eagle-eyed airmen would be able to spot the aerodrome from afar.

The mere fact that our arrival and departure from Smolensk were surrounded with so much mystery added an extra touch of spice to the adventure. We were having a glorious cruise across Russia, enjoying every minute of it in spite of those nauseating castor-oil fumes.

Our long flight from East Prussia to Smolensk and on to Moscow takes us over historic territory, for it was this way that Napoleon advanced on his ill-fated Russian campaign. Broken in spirit, beaten by starvation and cold, it was this way too that his once proud *Grande Armée* returned on that fatal retreat. I wonder what Napoleon thinks as he leans on a cloud rail in heaven (if that be his present abode) watching us race through the air over Russia in a few hours where it took him so many weary months.

For centuries this vast plain, with its swamps and its fierce winter climate, has formed an almost insuperable barrier for conquerors. Muscovites, Slavs, Tatars, Lithuanians, and Poles have fought for this city. Right here at Smolensk, on this very stretch over which we are flying, Napoleon encountered three Russian armies and drove them back after a two-days battle during which Smolensk was practically destroyed. The terrain beneath our roaring Fokker is hillier now than any we have seen thus

far since leaving Danzig. We took off from Smolensk and crossed the river Dnieper at two-ten P.M. It is now two-twenty and we have passed over the near-by hills and are looking down on the great Russian steppe again, with its farms, its forests, and most of all its dismal swamps.

From here on my thoughts were divided between the country below, those persistent castor-oil fumes, and gathering storm-clouds up ahead. Sandwiched in with these thoughts, going round and round in my brain like a dream in the early hours of the morning when you lie half awake, flashed memories of the history of Napoleon's Russian campaign.

Historians tell us that Bonaparte tackled Russia against his better judgment. He had often said that he would never be a second Charles XII. But his general policy of European domination drove him into the Russian gamble. Apparently he feared that his continental scheme would topple unless he could force Czar Alexander to terms.

The spring thaw held him up until June. Then *La Grande Armée*, with all its contingents, totaling half a million men and next to Xerxes' million the greatest army the world had seen, pushed through Poland. It marched across that same corner around which we have just flown. Back at Vilna, the city over which the Poles

and Lithuanians are still wrangling, the Little Corporal established his headquarters. For two weeks he waited, hoping that the Russians would give up from sheer funk. But Czar Alexander and his generals knew their Russia; they believed that if Napoleon plunged into the vast distances of this great plain he could be defeated — with the aid of Generals January and February.

When nothing happened during those two weeks at Vilna, Napoleon ordered the advance toward Smolensk. The Russian army wisely retired before him without venturing a battle. Right here at Smolensk (or rather, right *there*, for we have flown miles beyond the place in these few minutes) the Man of Destiny caught the Czar's rear guard and gave it a terrific pounding.

Napoleon established his main supply base at Smolensk. Then he pushed on toward Moscow. The Russian soldiers were spoiling for a fight and objected to withdrawing deeper into their country. They virtually compelled their generals to call a halt and face Napoleon in battle. The two armies met at Borodino.

Two-thirty-five P.M. We are flying just to the right of a small industrial city which apparently is Dorogobush. Borodino is still another hour's flight from here. We are following the valley of the Dnieper, but it is difficult to tell just where the main stream flows because all this region under us now is a continuous swamp.

A double-track railway line crosses it leading toward Moscow. We see a few patches of snow, the first since we crossed the Alps three weeks ago.

At five minutes to three we seem to be running straight into a rainstorm that is coming from the direction of the Ural Mountains. The storm belt appears to be about ten miles wide, and our pilot is swinging to the left in the hope of avoiding it. A storm, no matter how mild, adds little to the pleasure of flying. The rain has cleared the air so that we can easily see the city of Wjasma (or Viasma) five miles or so to the south. There are so many white spires and domes that from a distance it looks like a white spectral city of churches. We have passed that storm now, but another is following in its wake, and in an attempt to dodge it we are swinging east across the railway. What a glorious plain this is! Surely Russia and the United States should be the two richest agricultural countries in the world, and they are.

Three-fifty-two P.M. Here we are right over the battle-field of Borodino, or, as the French call it, the *Bataille de la Moskova*. Just under our wing is a tall stone column surmounted by a golden eagle. One hundred and four thousand Russians with six hundred and thirty-seven guns faced Napoleon, who had less artillery but twenty thousand more fighting men. Napoleon's army

gained a technical victory, but a costly one. It might have been decisive, but he was unwilling to risk using his Old Guard on this day. It turned out to be the bloodiest battle Napoleon ever fought. His losses ran to over twenty-five thousand and the Russians' to forty-four thousand. From Borodino the French marched on and took Moscow. Then, while they were in control of the city, the Russians burned it and laid waste the surrounding country. With late October came the Russian winter. Napoleon ordered a retreat. The country was desolate, and there were no supplies. He was the monarch of an empty land. At Borodino, on the return the invaders were greeted by the ghastly remains of thousands of their unburied comrades. The first freezing blasts of winter caught the retiring army just beyond Borodino, and from then on the retreat degenerated into a dismal struggle through the snow. Roads became sheets of ice. Within a week nearly all of the horses in the entire army had perished. Guns were abandoned. Bands of Cossacks cut down the stragglers.

Napoleon still hoped to reorganize at Smolensk, where he had established his main supply base on the way to Moscow. But the army was so demoralized that the first stream of fugitives into Smolensk pillaged the stores. The winter was increasing in severity. The soldiers could not be got under control. The Russian army was

threatening to cut off the French from their line of retreat to Vilna. Napoleon, instead of reorganizing at Smolensk, stayed in that town only a few hours.

The most tragic part of the retreat was back there between Smolensk and the Polish border. The Russians under Kutusoff intercepted the French rear guard under Marshal Ney who after bloody fighting caught up with the sorry remnants of *La Grande Armée* and its allies. On his way Napoleon picked up detachments that had been left to guard the country. The Russian pursuit was distanced. All that remained was the weather. The last stage of the march to Vilna marked the final disintegration of that mighty force of half a million men. The elements — cold, snow, and blizzards — reduced it to a half-crazed mob. It dwindled to fifteen thousand fugitives. At its head marched Bonaparte, 'clad in furs and supporting himself with a stick, his face covered with a beard, his expression set, but curiously placid.' Only a few thousand of Napoleon's staunchest troops survived. When Ney got to Königsberg, Napoleon having hurried on ahead to Paris, he counted less than a thousand men under arms — all that remained of the resplendent host of chasseurs, lancers, dragoons, cuirassiers, voltigeurs, and grenadiers with which Napoleon had set out to smash the might of the Czar. The rest of that

half-million had either been killed, captured, or had deserted. That in brief was the story of Napoleon's bitter Russian venture.

Eighteen-twelve seemed to have proved that Russia could not be knocked out. But in 1917 the Germans came, under circumstances of modern industrial and political conditions, with motor transport, long-range guns, masterly organization, and squadrons of airplanes that could traverse in an hour or two the region over which it had taken the flower of Napoleon's army many weary months to march. The Germans proved that Russia was vulnerable.

Three-fifty-five. We have crossed the border from the province of Smolensk to the province of Moscow now, and below us is the city of Moshaisk with four handsome churches of a bizarre architecture unlike anything that you will see in western Europe. There are storm-clouds just ahead of us, and we are flying at an altitude of less than five hundred feet in an attempt to keep under them. As we pass beneath the blackest ones it seems as though a cloud-burst might drop from their dense midst at any second and swamp us. But in a moment we have escaped that danger and are over an enormous forest. In the heavens just ahead is an exquisite double rainbow with one end of its outer bow right where the ancient capital of Ivan the Terrible ought to be. The bands of red, yellow, and

green in this rainbow are the widest I have ever seen. Now it has changed from a bow to a column of color with hundreds of dark streaks cutting diagonally across it. What a spectacle! What a climax to a long flight!

Here and there in the forest we see a long church or monastery with its white or golden dome. It is easy to see that the Church once played a prominent part in this country, and that much of the wealth of Russia must have gone into building these lonely structures. We wonder if all this wealth will now be applied to education, or will it find its way into the pockets of the grafters of the new régime?

We pass over village after village with names so long that by the time we have read one on our map we are flying over the next.

Here was the real Russia, the Russia of endless fields and the dark millions of the peasantry. How did the old, traditional *muzhik* take this new color of revolutionary red? How did the vast Russian countryside like the régime of the Bolos? Naturally, at five thousand feet or even one thousand feet we could tell little about that. But I recalled some things Maurice Hindus had to say in his striking book, 'Broken Earth.' Hindus was from a Russian peasant village, and, after many years in the United States, he recently went back to his native town and watched the course of rustic life under the So-

viets. He gives his picture through the lips of the people themselves:

'There is no hope for the poor *muzhik* now. By Jove, there is not! He might as well hang a stone around his neck and jump into the river.'

'There is no way to earn an extra kopek any more.'

'They have driven away those who gave us a chance to earn an extra kopek.'

'Haw, haw, haw, what they promised us.'

'Machinery, 'lectricity, new homes, schools, everything.'

'And land.'

'Land, land, land. Haw, haw, haw.'

'Defeat the counter-revolutionaries, they said, and you'll get everything.'

'A plague they've given us.'

'Not one, but half a dozen.'

'If you want a load of wood we have to travel forty versts and pay for every rotten stick we pick up.'

'If they'd at least divide the landlord's estate! To the devil with their machinery and 'lectricity. It's land we want, and they have turned it into a *sovkhos* (Government farm).'

'With a new landlord in charge, a Red landlord.'

'Who in damnation wants a *sovkhos?*'

'Who? Aye, those lazy loafers who are running it.'

'Lazy and nasty. God, how nasty!'

'Nastier than the old landlord. Then, if your horse got into a hayfield and you were poor, you could go to the landlord and promise never to allow your horse to wander into the field again, and beg him to let it go free, and often he did, and you kissed his hand and rode home on your horse. And now, brother, if those scoundrels on the *sovkhos* see your horse with one foot on their land, they fine you five poods of rye.'

'Aye, and ten.'

'Or else three days' labor.'

'And five, too.'

'Five plagues on them, the ugly beasts!'

'And the taxes they squeeze out of us for everything.'

'Soon they will be taxing every drop of rain that falls on our land.'

'And the very air we breathe.'

'Aye, and every beetle that buzzes by our ears.'

'Russia is perishing, perishing.'

'Perishing, indeed, perishing!' boomed a multitude of voices.

What dismay and disillusionment! What wrath and despair! And yet back of it was no spirit of resignation, but rather a mood of protest and defiance, as of a people who felt that they were being cheated out of something that was theirs by the rights of man and nature, and

they would not calmly submit to the deprivation.

Hindus then tells of the hated Red landlord and detested Government farm. There the Soviet authorities were trying to conduct an agricultural experiment. The Red landlord speaks:

'When my predecessor and I came here,' he pursued gravely as if at a confessional, 'we had courage and faith and enthusiasm. Our sole aim was to enlighten and uplift the *muzhik*. We talked to him as to a brother. We knew his past. We knew how cruelly he had been treated in the old days. We overlooked his wrongdoing. We exacted no penalties. Never. God forbid! He was our *muzhik* brother, dark and unfortunate and uncultured. When we found his horse or cow or pig on our land, we drove it off, often drove or led it to his home and begged him to watch it in the future and keep it off our lands. We made trips to near-by villages, called meetings, held discussions, explained that the purpose of our *sovkhos* was to help him rise out of his poverty and squalor, that it was a big school for all the *muzhiks* in the district, that we'd have demonstrations and classes and conferences on all possible subjects touching his welfare. That's the way we talked, and begged him to coöperate with us, to respect our labor and the fruits of our labor in the fields as much as we did his own.

WITH BLINDS DRAWN WE DESCEND ONTO OUR FIRST BOLSHEVIK AERODROME

PLUNGING THROUGH THE STORM CLOUDS WE EMERGE ABOVE THE MOSCOW RIVER AND SLIDE PAST THE RED SQUARE AND THE SOMBER WALLS OF THE KREMLIN

'Ah, how patient and forgiving we were! How we begged and exhorted! But it did not help. Day after day horses and cows and pigs would get into our fields, and we'd catch *muzhiks* stealing this and that. We were in despair. We didn't know what to do. We could not make up our minds to use the club. That seemed so terrible — to use a club on our suffering brother. I tell you that we were heartbroken, and yet we had to save this *sovkhos*. That's what the Soviets had put us here for. And in the end we saw that words alone would not achieve our aim, and we had to use sterner methods; we had to resort to force and punishment. Else the *muzhiks* here would strip every shingle from our roofs and pull every building apart, and lug off every tool and scrap of iron we have.'

So there are two sides to the tale, as there always are, and we gather from Hindus that it may be many a long day before the *muzhik* emerges from the gloom.

Ha! We must be nearing a real city. For the first time in Russia we are looking down on one great country estate after another, with baronial homes that once must have been the suburban villas of Central Russia's aristocracy.

At four-thirty we plunge through the edge of another storm-cloud. For a moment all is darkness; then as we emerge we look down on the

Moscow River again, catch a glimpse of a great castle, and then ahead we see the golden domes and high walls of the Kremlin.

At four-thirty-seven we circle above a great aerodrome as enormous in extent as the flying-field at Königsberg, Prague, or Le Bourget. A moment later and we have side-slipped into it and are taxi-ing up to the hangar where we are to disembark from the longest stretch of skyway that we have ever spanned in the space of a single day.

CHAPTER XX

IMPRESSIONS OF ONE WHO FLIES IN ONE DAY AND OUT THE NEXT

Our big Fokker side-slipped toward the Moscow aerodrome, swooped over the Derluft hangars, and here we were at the end of our thirteen-hour flight from Berlin. The bald-headed mechanic leaped to the ground, pulled out the spidery metal ladder that we carried in the cabin and helped us totter down. Totter is the correct word because we had air-legs as surely as any mariner ever had sea-legs.

For the first time during our aërial wanderings over Europe there were no porters to take our bags. This was our introduction to the capital of the country where every man is as good as every other, according to the official doctrine, and where not many, apparently, are keen to wait on others — or was it because the proletarian theories of the Government would not permit the countless pauperized people of the middle and upper classes to earn a few kopeks by serving as porters at the aviation field?

We carried our bags to the nearest hangar, and then waited for something to happen. There were no customs officers in sight, no police to seize our passports, no officials to ask us how we

had enjoyed the ride, and no motor-car to take us to the hotel. The flying-field was deserted except for a little knot of people who had watched us land and who stood smoking their cigarettes and eyeing us curiously. In a few minutes our German pilot — for, as I previously mentioned, both pilots and mechanicians on this route are Germans — came over and explained that we had arrived nearly an hour ahead of time, blown in on the swift current of a following wind, and that he supposed the Bolshevik officials would turn up in a little while.

After a long wait the customs officer put in his appearance. He was a big fellow with a black mustache, who wore a military cap, a leather coat and a black shirt, and cavalry breeches and boots — the costume that seems to be the regular uniform of Red functionaries from Stallin down. He was gruff and rude, with none of the urbane courtesy for which the Russian upper classes were renowned. He made us sweat for half an hour. He turned our traveling-bags inside out, and pounced on all our magazines, books, and personal letters, which he confiscated. Later on, an American friend in Moscow told us that it was almost impossible to get publications from the outside world. Although he subscribed for the 'Saturday Evening Post,' the 'Literary Digest,' and several London periodicals, they never reached him. The Bolshevik customs in-

spector suddenly left off rummaging among our personal effects. He had spied our camera, a bulky Graflex. When we left Königsberg we were not allowed to take it into the cabin with us. Snapping pictures during our flight over Russia was — well, the Russian equivalent of *verboten*. The camera was carefully stowed away in the baggage compartment. At Smolensk the Soviet officials at the aerodrome carefully sealed it and put it back. This Moscow chap apparently wanted to confiscate it. But now we had an ally. Madame Davidoff, the charming and cultured wife of the Russian director of the air line, came to our rescue, and acted as our interpreter. For fifteen minutes she carried on a heated debate with the surly official, urging him not to take our camera from us. At last he let me have it, but told me not to use it in Russia. He carefully wrote the serial number of the machine under the Russian visa on my passport, so that upon our departure from the country the officials at the Finnish frontier would be sure to make an inspection to see whether we had taken any pictures. While the argument was in full swing, I repacked our suitcases, and succeeded in slipping some of our papers and books back into them without their being noticed.

My constant companion during our 'Seeing Europe by Air' was, of course, my wife — and also my notebook. On every flight and in every city

we visited I jotted down sundry observations. My notebook was with me now, but I thought I had better give it a rest while we were in Russia. My first encounter with Bolshevik officialdom was an indication of what might follow. The Red customs inspector looked at us with apparent mistrust. He also eyed my derby hat suspiciously. Evidently it was a count against me. It seemed to be the only one in Moscow.

Shortly before we boarded the night plane at Berlin, I happened to pick up an English newspaper, and there I found a long and harrowing account written by a correspondent of the London 'Daily News' of how the Bolos had accused him of being a spy from Scotland Yard instead of a journalist. He stated that on the flimsiest pretext he had been chucked into a Moscow dungeon with a crowd of half-starved, half-crazed, vermin-infested criminals, from which brutal imprisonment he had been lucky enough to make his escape after several months.

So, farewell, Friend Notebook, for a while. In some less revolutionary land I will make you acquainted with my fountain pen once more. For the present we will rely on our memories. Subsequent events showed that the decision was a wise one. When the time came to pass the frontier out of Red Russia, we were glad we had made no notes.

We remained in Russia a little less than a

fortnight. So, of course, our observations are of no value for any one who wants a fair picture. Still, as mere incidents of a traveler's journey, they may be worth jotting down. Officials at the Moscow Foreign Office told us that only about a hundred and fifty Americans and British had been admitted into Russia during the preceding twelve months. The experiences of any one of the hundred and fifty ought to make interesting reading, even though what they say might be worthless for the purpose of forming an opinion of how the Bolsheviks are getting on with their experiment. To us our whole Russian experience was absorbingly interesting, and had we not been in the middle of a long aërial expedition in which we hoped to cover all the skyways of Europe, we should gladly have stayed in Russia for many months. However, by the time we reached Moscow we were three months behind our schedule. We came away from Russia with our minds hardly more made up about the merits of the Soviet régime than before we went there. Personally I should take no man's word about the Russian situation unless I knew that he spoke Russian fluently, had mingled with the leaders as well as the lesser lights of the comparatively small group of politicians who control the Communist Party, had traveled from one corner of the country to the other, associating and living with peasants, factory workers,

professional people, and folk in all walks of life, without their being aware of his mission — and even then I should take what he had to say with a heavy dose of salt unless I knew from other things he had written just what his prejudices were. Naturally, that would eliminate all but a few of the hundred and fifty Americans and Britishers who were in Russia during the year preceding our visit.

By the time we were through with the customs inspector, a touring-car had arrived. The chauffeur sat rigid in his seat and made no attempt to assist us with our baggage or even open the car door. He took us tearing through mile after mile of streets lined with somber people and shops, the names of which were all in the most unintelligible-looking Russian. The ride from the aerodrome to the hotel took about fifteen minutes, and the taxi-driver demanded five dollars for it. This, on top of what we had paid for a bite of lunch at Smolensk, convinced us that we were indeed in a country of high prices. A Moscow friend told me afterwards that my derby hat added an extra thirty per cent or so to our bills, just as a title in front of your name does in England. From then on, until we crossed the frontier into Finland, we were to pay more for everything in the way of living than *de luxe* accommodations would have cost us in New York, and twice as much as the best in Berlin or London.

We had heard a lot about the decline of the Russian ruble, but we soon discovered upon reaching Moscow that the present rate of exchange is arbitrarily fixed by the Government and has nothing to do with the balance of trade between Russia and other countries. In the outer world the ruble is not negotiable at all, but in Russia, at the time of our arrival, two Soviet rubles were given to you in exchange for one American dollar. We were allowed no option as to what hotel we were to go to. The taxi-driver simply drove us to the Savoy and dropped us out there. Somehow the name Savoy carries with it a picture of luxury and perfect service, perhaps because of memories of the Savoy in London and its twin in Cairo.

At the Moscow Savoy we got another shock. No uniformed footman opened our taxi door and no porter dashed forth to seize our bags. In the lobby behind a high counter sat an unkempt chap with a cigarette drooped down over his chin. Just what this official's title is we never learned, but apparently he was the reception clerk, cashier, concierge, telephone operator, manager, and on top of all this a member of the Soviet Intelligence Department. Except for two runners (they would be offended if you called them messengers) with revolvers stuck in their belts, whom he sent to the opera, the ballet, the Bat Theater, and the railway station

for tickets, we never saw any other hotel employees in that Savoy lobby.

Oh, yes, there was an elevator attendant up a short flight of stairs who smoked a cigarette as he took us up to our room and who looked at us as much as to say, 'Where the h—— do you want me to let you out?'

Instead of there being a man on each floor to take care of your muddy shoes and your wants in general, there was one flunky for three floors, a nondescript type who might have come originally from Greece or most anywhere in the Levant. He too was always either 'rolling one' or had a home-made 'gasper' dangling from his lips whenever he deigned to honor us by responding to the bell. He spoke a little broken English, the jargon you hear from newly arrived bootblacks at the Park Row end of Brooklyn Bridge. Without our asking, he volunteered the information that his name was Pete. When we glanced around at our tiny, barren room with its two little iron beds such as they give prisoners at the Tombs, he grinned and seemed delighted because we obviously were surprised to find such shabby accommodations — especially at the rate of ten dollars a day. But we really didn't mind it in the least. It was worth it all just to be in Moscow. In fact we were rather pleased because apparently we were the only occupants of the room. That night the resident correspondent

for the 'New York Times' told us that he and another American journalist had occupied the same room in company with two huge rats, with whom they became so intimate that they nicknamed them Peter and Paul.

In the dining-room, away up above the street on the fourth floor in a remote corner of the hotel, glum-looking waiters served us the poorest meals to be found in all Europe — and at London Savoy prices. Judging by the attitude of the staff at this hotel the motto of New Russia must be: 'To so live that you can look every man in the eye and tell him to go to blazes.'

Still, one shouldn't be in a hurry to find fault. When you recall that Russia has been through the greatest social revolution of our time, that Moscow has passed through a period of chaos from which it has not yet had time to recover, and that most of its middle class, including the better-educated people, hotel proprietors, and their customers, have fled or are dead or are in Siberia, or are wearing the loose blouse of the proletariat and lying low, you can hardly expect the Savoy in Moscow to be like its namesake on the Thames Embankment, where movie stars and dealers in oil stocks Charleston to American saxophones.

But the number of foreigners who visit Russia is increasing each year and a large proportion of these are of the type that the 'Saturday Even-

ing Post' refers to as 'the great and the near-great.' Some are members of various European parliaments, Congressmen from America eager to see Soviet Russia with their own eyes, and foreign financial experts. Many are French, German, Scandinavian, Italian, English, and American capitalists or their agents. A few are writers. Some are foreign impresarios who have come to study the present-day Russian theater, which is second to none in the world. Then there are sociologists, economists, and expert observers of all kinds. The heads of the Soviet Government say that they welcome these people, and apparently this is so or they would not be given permits to come. The Soviet officials further declare that they want foreign capital to come in and develop Russia, mine her minerals, build smelters, establish factories, harness the water power, and coöperate in every other commercial way.

It is an old saying that first impressions are the lasting ones. If this be true, then a traveler's first impressions usually are of his food and lodgings. What hotels there are in Moscow and elsewhere are run by the Government. It would seem that if the Soviet leaders really want outsiders to form a good opinion of their régime, they ought to extend themselves a little in this matter of hotels. If they want the stranger to think them capable of managing a vast country

like Russia, it won't do any good to have the stranger say to himself that they can't manage a place like the Savoy half as well as a roadhouse proprietor down on Long Island or a *chaukadar* in a Bengal *dak* bungalow. One doesn't mind sleeping on the floor or on the cobblestones of a caravanserai courtyard, or with one's head on a camel's saddle, if there is a reason for it. But when you visit a city of a million people, the capital of a country whose Government officials claim to have evolved a system of government superior to any other and who ask visiting citizens of foreign countries to believe what they say, then they ought to show themselves to be at least capable of running one clean, comfortable hotel, not as good, perhaps, as the best hostelries of Paris, London, or Cairo, but approaching the standard of the inns of the smaller cities of India or China or of a Malay jungle resthouse. They might, as a beginning, change the menu in the dining-room once a day. The Bolsheviks, in the opinion of a couple of aërial voyagers, have overlooked a rare opportunity for putting their visitors in a cheerful frame of mind that would help them look at the socialist experiment through rosier spectacles.

However, the problem was not ours, and we enjoyed the novelty.

We saw numbers of pitiful-looking children in the streets, evidences of one of the worst evils

developed by the ultra-modern theories that have been put into effect in Russia — the innumerable street population of stray, starving waifs. They stand, for the most part, as a monument to the Bolshevik attempt to crush out 'bourgeois' customs and prejudices. The dam broken, the flood is released, and I suppose one's duty to take care of one's children was a bit cracked up with the rest of the superstitions, particularly when, with starvation on all sides, that duty must have been in many cases a savagely hard one to fulfill. Nor does the Red marriage seem to make life any too happy for the children it produces, and doubtless it contributes its quota to the companies of hungry waifs. Marriage in Russia is now up to the latest modern ideas. It is practically free mating. Divorce may be had for the asking. The offspring of these advanced unions seem to have only the slightest legal protection. Parents are constantly splitting up and taking new partners, and the children have an uncertain time of it in the general shuffle. That is perhaps natural in a system of marriage in which only the pleasure of the contracting parties is considered. The socialist theory, to be sure, presents the beautiful picture of the State caring for all — including the children. That is a part of the Bolshevik programme. It is something like a man who promises to save the world by giving away millions in exalted philanthropies — when

he hasn't a cent. How the present wreck of Russia can put into effect a Utopian programme which would tax the wealth of the United States is a problem a lot more difficult than any cross-word puzzle. It amounts to clothing and feeding the population with idealistic promises. Unfortunately, as is well known, you can't eat promises — neither can the children.

We met many of the heads of the Moscow Government, and heard from their lips the same story that had been written a hundred times or more — Russia was and is controlled, not by the Russian people, but by a small minority. It is obvious on the surface that they have simply changed masters, for good or bad only time can tell. The Communist Party, even on paper, includes in its membership less than one one-hundredth of the population. Then the party, itself, is ruled by a small group of active members, some of them scalawags and some of them earnest and brilliant men. The leaders we met had all the earmarks of being sincere, eager to put Russia on her feet and improve the lot of the average citizen. Whether they accomplish much for the present or not, our experience in Russia gave us the instinctive feeling that everything will work itself out to some satisfactory conclusion, partly because it is now easier for the Russian people to overthrow one régime after another than it was in the days of the Czars. There

is a real difference between the situation now and that which existed before the Revolution. The present Government has a healthy fear of what the masses will do, and that fear alone is a check on the actions of the leaders.

But this is idle theorizing on my part and of slight interest to those of you who are accompanying us on this flight. And there is no use of my talking about the personalities of the Russian Government. Every one of the Soviet leaders has been fully described and interviewed. But there is one person in Russia about whom you know little, and to my mind he is the most interesting personality in the country.

CHAPTER XXI

THE TALE OF AN ANGLO-MUSCOVITE

He is not a Russian at all, but a foreign journalist. Yet I verily believe he knows more about present-day Russia than any Russian. At any rate, he is the only foreign observer who has been able to stick it out in the country from the early days of the Revolution right down to the present moment. So keen is his mind, so flashing his wit and humor, so disarming his way of making everybody look at him as an unbiased critic that I believe he even has the Soviet leaders 'buffaloed.' He has an amazing capacity for political analysis, a unique ability to diagnose European political problems. Even the Bolsheviks admire and respect him, and, if they disagree with his reportorial expressions, his irresistible enthusiasm and humor keep them from ordering him out of the country, as they have done with nearly every other foreign observer who has tarried long in Russia.

This chap is a volcanic young Englishman in the employ of an American newspaper. His name is Walter Duranty, and he writes for the 'New York Times.' He has been on the staff of that paper ever since the early days of the World War, when I first encountered him in Paris.

Thirteen hours of flying is a stiff dose for any one day. The strain on a mere passenger is twice what it is on the pilot and mechanic. Their thoughts are completely taken up with their work, watching the instruments, keeping a veteran weather eye on land and sky, and listening intently to the hum of the motor. That makes time fly for them. Your aërial passenger, however, has little to do but think of possible troubles that may arise and to dwell on his own inner sensations as the plane hits one air bump after another. People who have never flown tell your aërial passenger what a brave fellow he is. He knows that already. That's just the trouble. Unlike the pilot, kept busy at his intricate lay-out of instruments, he has too darn much time up there in the sky to think over what a brave fellow he is. At any rate, we were fairly tired and in somewhat dismal mood when we reached Moscow, and it was a real pleasure unexpectedly to encounter a friend. Moreover, this Anglo-Muscovite who does pieces for the 'New York Times' is as sweeping in his hospitality as an Arab sheik.

Duranty is one of the few people whom the Soviet Government allows to maintain a fair-sized apartment. The Government controls the whole problem of lodgings, and few persons are permitted to have more than one room. Several times the Bolsheviks have tried to force Duranty

to house from three to ten Russians in his three-room flat, but in his overwhelming, witty way he has swept the orders of the Soviet aside. He seems, likewise, to have the best chef in Moscow, one a hundred per cent better than at the Savoy. He has a wine cellar, a thing almost as rare in Russia as in Kansas. Then, to cap all of this, he has a gift that makes him a veritable prince of hosts. He tells stories as artistically and with as great gusto as any professional Irish raconteur that ever came from the land of Kilkenny Castle. But Duranty's own story is as fascinating as any of the wild tales of Red Russia that he told us. I heard it from his friends in Paris during the War.

He is a Cambridge graduate, and while at the university he specialized in the classics. He had a particular talent for Greek and Latin, mastering them to the point where he could speak them as readily as he can speak English, which is about twice as readily as the average Englishman or American can speak it. When he had completed the regular university course, he was still so interested in classical lore that he stayed on for several years, living on scholarships and devoting all of his time to writing scholarly essays in Greek and Latin.

Finally, growing bored with a don's life at Cambridge, he migrated to Paris, to the Latin Quarter. He had no income and knew nothing

about earning a living. He nearly starved. Occasionally he picked up an odd job that kept him going for a few weeks. Then he would miss a few meals. Then find another job of some sort, and so on. When the War broke out, he was turned down for military service because he was too small.

Things went rather badly with him during one particular period and for several days he had had nothing to eat excepting a roll or two. Just as he had pulled his belt to the last notch, he encountered an American journalist who had recently arrived in Paris, Mr. Wythe Williams, sent over to act as the Paris representative of the 'New York Times.' Williams knew no French, and therefore needed an assistant to help him for a while. He asked the diminutive Englishman if he could speak French fluently and, if so, whether he thought he could write things suitable for a newspaper. Duranty replied that he could write anything, for anybody, on any subject — if paid enough to buy regular meals.

So Wythe Williams took him on. Soon he had established something of a reputation, and by the time the War was over and the Peace Conference was on, Walter Duranty had risen to the dizzy eminence of a star correspondent. Assignments took him to nearly every country on the Continent, he came in contact with all of the

leaders of that period, and so vast became his store of knowledge of the complicated European problems that he developed into an authority.

Since then, for some six years, he has 'covered' Russia, all eastern Europe, and a part of Asia, for the 'New York Times.' When he first went to Moscow he knew nothing of the Russian language. But such was his gift for foreign tongues that he quickly picked it up. Now he speaks Russian so fluently that he can hold his own with Soviet cabinet ministers or even with peasants, soldiers, and drosky drivers, which is a real achievement. Just to hear Duranty telling a combative drosky driver to go jump off the Kremlin wall is worth a trip to Moscow.

Duranty declares that all the years he spent in Cambridge mastering Latin and Greek were a total waste of time. But I am sure his tongue is in his cheek when he says it. His classical erudition undoubtedly is largely responsible for his amazing skill at manipulating the English language and for the ease with which he has picked up modern languages. Moreover, his wide knowledge of literature has played no small part in enabling him to write the streams of brilliant articles on post-war Europe and Red Russia that have flowed from his rickety typewriter.

But brilliant though Duranty is as a scholar and a foreign correspondent, he is still more

brilliant as a story-teller — if you get him in front of the fireplace of his little flat in Moscow, over a bottle of Madeira.

One day he was riding on a street car in Moscow, looking at a Russian paper and reading about the dirigible Norge and the trip that Amundsen was about to make across the Pole. Next to him sat an old Russian woman. She was peering over Duranty's arm. Suddenly she spoke up and told him that she knew why Amundsen was going to the Pole. It was simply in order to rob the Ice King's palace of its gold and bring it back to Russia! She said she knew this because the winter had been a very severe one and the spring was late, which must be due to the anger of the Ice King after hearing of Amundsen's plan.

Duranty was so amused at this that he asked a soldier sitting across the aisle in the tram what he thought about the coming flight of the Norge. The soldier replied that he didn't know, but he had seen so many wonderful things since coming to Moscow that perhaps even this story might be true. He said that once a man had come to his village and told the people that he could make a light that wouldn't burn. The peasants didn't believe him. Then the man took something out of his pocket (an electric flash), laid it on the ground, piled straw all over it, and lo and behold, he caused the thing to light up. The peas-

ants felt it and although it was warm it did not burn the straw. Thinking the man was surely a sorcerer, they ran to the village priest and asked him to come and throw holy water on the light. The soldier added that he had been told men could fly, but of course he hadn't believed it until he came to Moscow and actually saw them doing it. Also he had recently found that it was possible to speak to a friend ten miles off by putting his mouth against an instrument. He had heard in Moscow that there were buildings in America forty or fifty stories high. Well, maybe there were, and maybe the Ice King did have a palace of gold to which this Norwegian intended to fly in his airship in order to loot it.

Duranty's next 'number' was a yarn about a Russian soldier and his sweetheart who were to be married. The young man was a Communist and wanted a Soviet commissar to officiate. But his sweetheart insisted that it be done by the village priest. So they started for the priest's house in their sled, through deep snow. On the way they were stopped by the village sorcerer who warned them that they would encounter evil on the way. He added that if they would pay him two rubles he would ward off the evil! The girl begged her lover to pay the sorcerer, but this young Communist soldier was made of sterner stuff. He scoffed, and said it was extor-

tion. Said he, 'I don't mind paying a priest to marry us, but when it comes to giving money to a sorcerer who terrifies our people with his superstitious rot, I draw the line. This fellow needs a sound beating.' Whereupon the soldier proceeded to give him one.

Clambering back into the sled he cracked his whip and off the horses plunged through the snow. When they had almost reached the priest's house a great white object loomed up in front of them. It terrified the horses and made them lunge. The girl screamed and said, 'Oh, oh, it's the sorcerer and he has come to prove that what he said was true.' Whereupon the soldier climbed out and ran his bayonet through the object. It proved to be a big fat white pig.

Then the priest came running from his cottage, livid with rage, and shouting, 'Why have you killed my lovely big fat pig that I was keeping for Easter? I shall have you in court for this and I shall demand that you pay me one hundred rubles for my pig! Why have you come here anyhow, and who are you?'

'We have come to be married,' spoke up the soldier.

'By whom?' shouted the priest.

'By you.'

But the priest was so angry that he refused to marry them. The girl was distressed, but her stern lover drove off to the Red commissar and

they were married according to the groom's original plan.

The priest and sorcerer both went to court over the matter, and demanded retribution. The Red judge decided that the lad had done quite right in defying the sorcerer and that he need not pay for the pig. So the two old Russians, representatives of the ancient order that is passing in the land of the Czars, paid the court expenses between them.

The new Russian experiment regarding marriage and divorce provided Duranty with a theme for sundry curious observations. By way of getting a divorce you merely went to a clerk and said you were tired of your husband or wife. He gave you a stamped paper, and that was all there was to it.

Shortly before we arrived, Duranty had been told of a man and his wife who suddenly decided to call it a day and quit. They got their divorce. The wife went to live with friends and remained as long as she could at each place, until finally she had nowhere left to go. Evidently she had worn our her welcome while making the round. So she went back to her old home and shelter. But her ex-husband refused to let her stay. She marched right to the Housing Committee and told them her story. She must have been persuasive, because they compelled the former husband to take her in and give her shelter until

the case could be straightened out. When it came up for decision the divorced wife was told that she could stay right there in her former home just as long as she liked; needless to say a somewhat novel situation for a divorced couple. After a bit they made up and were married all over again.

This housing problem in Moscow is apparently serious. Seven and eight people, regardless of sex, occupy nearly every available room, and strangers are dictatorially billeted by the Housing Committee in private homes without the original occupants being permitted to say aye, yes, or no. On one occasion Duranty came back from a trip to Novgorod and found a notice that ten students had been assigned to take up quarters in his drawing-room. No one seemed to know who these students were or where they had come from. Moreover, there were young men and young women all mixed together. So Duranty threw them out, and told the Soviet officials what he thought about their little plan — which was considerable.

The evenings we spent with Duranty were as delightful as those nights in Baghdad when the Lady Zobeide held the Calif Harun-al-Raschid spellbound with her stories. The yarns we heard during those Moscow nights would make an enchanting book, but it would be better still if audiences could hear Duranty tell them in

person. He has an air and manner that add an inimitable piquancy.

In the ten years that my wife and I have wandered to the ends of the earth and back we have encountered many a rare and wondrous story-teller. There was Commander Robinson of the Australian Navy, second engineer on the cruiser Sydney during her famous race and battle with the German raider Emden in the Indian Ocean. Robinson had been blown up on warships in three different engagements. I remember him most vivdly while we zigzagged across the Mediterranean on a tramp steamer trying to dodge U-boats. Our ship was loaded with ammunition for Allenby, and Robinson's harrowing stories of naval battles and of how he had floated for three days hanging to a spar in the North Sea kept our minds off thoughts of what might happen if a torpedo hit our ammunition ship.

Of a different mood was the yarn-spinning of Commander Shelford, the merry skipper of the Orient liner Orvieto, with whom we voyaged to and from Australia. He served the comic muse. His store of anecdotes seemed inexhaustible, and for ten solid weeks he told us yarns every day without repeating himself. There must have been a thousand-and-one tales in his repertoire. From him I first heard a funny one that tickles my ribs every time I think of it. He had picked

it up in New York. There had been a fire in the upper stories of the United States Rubber skyscraper. A clerk was trapped up there. He encased himself in a huge shell of rubber tires, rolled out of a window into space. And three days later they had to shoot him down to keep him from starving to death!

Bachellor, American Trade Commissioner in Calcutta and formerly of Peking, fascinated us with Buddhist and Hindu stories on those hot Indian nights out in Bengal. He told of a queer tale he had heard among the monks of Tibet. You remember how the Bible tells of Christ's going into the wilderness, a blank period in his life. The Tibetans claim that there are ancient manuscripts in their monasteries which show that Jesus, during the period of his having vanished in the wilderness, visited the East and studied with the Buddhist sages of the lofty Himalayas.

At Colonel Lawrence's base camp at the head of the Gulf of Akaba there was a Major Scott and at Ramleh in Palestine there was Colonel Barney Todd, who ran neck and neck for the honor of being the best troubadour in the Allied Forces 'out East.' Each was excellent in his own way. Barney Todd was an impetuous Irishman who had command of the Tenth Australian Light Horse at the capture of Jerusalem. After the Turkish garrison had fled, Allenby ordered his

troops to remain outside the city until after the formal ceremony of surrender, which was not to be held for a number of days. But Barney Todd was afraid that in the meantime his Tenth Light Horse might be ordered off to some God-forsaken place and miss seeing the Holy City. He coolly disobeyed orders and led his cavalry regiment in through the Jaffa Gate. The Australians saw Jerusalem from one end to the other before Allenby had set foot within the walls. Near the Jaffa Gate is what is known as the American Colony Store, run by a number of hospitable Americans, Germans, and Scandinavians who originally came here to await the second coming of the Lord. In the meantime they do a thriving business at their curio store inside the wall. They contrive to make their mission of awaiting the second coming decidedly profitable. Barney went to the store and bought a large supply of picture postcards showing various scenes in and around Jerusalem. He sent one to about every king, president, prime minister, and high functionary of state in the world, with this message boldly written: 'Have just captured Jerusalem. Barney Todd.'

Then there was jovial General 'Dick' Richardson, Alaskan trail-blazer and road-builder, and afterwards commander of the American force sent to Archangel to fight the Bolsheviks, who told us thrilling tales of the North, while we

sailed with him across Bering Sea, from Nome to the Aleutian Islands. And Vanderlip, the oil explorer and mining engineer whom we unexpectedly encountered at a caravanserai in Central Asia. He had hunted for minerals and oils from Persia to Kamchatka, and had been captured by Moro head-hunters in Mindanao. Nothing like travel to throw you in with great stories and great story-tellers, and among the best that I have ever run across was Walter Duranty, of London, Montmartre, and Moscow.

When, after an evening of enchantment, we left Duranty's apartment at all sorts of hours, we had to walk for eight or ten blocks through the heart of Red Moscow before we got to our hotel. The streets were nearly deserted. But we felt no uneasiness in wandering about after midnight. Duranty told us that he believed Moscow to be more carefully policed than most large cities of the Western world — Paris, Rome, or even Chicago.

CHAPTER XXII

RED RUSSIA FADES TO PINK

AFTER the usual round of visits to the Kremlin, Lenin's Tomb, Red Square, the theaters and markets, we set off for Finland, via Leningrad, to resume our flying. There is no airplane service between the two largest cities of Russia. The night passenger mail train makes the journey with such speed and comfort that there is no great demand yet for a commercial air line. Nor do planes operate between Russia and Finland. There is too little passenger travel that way as yet.

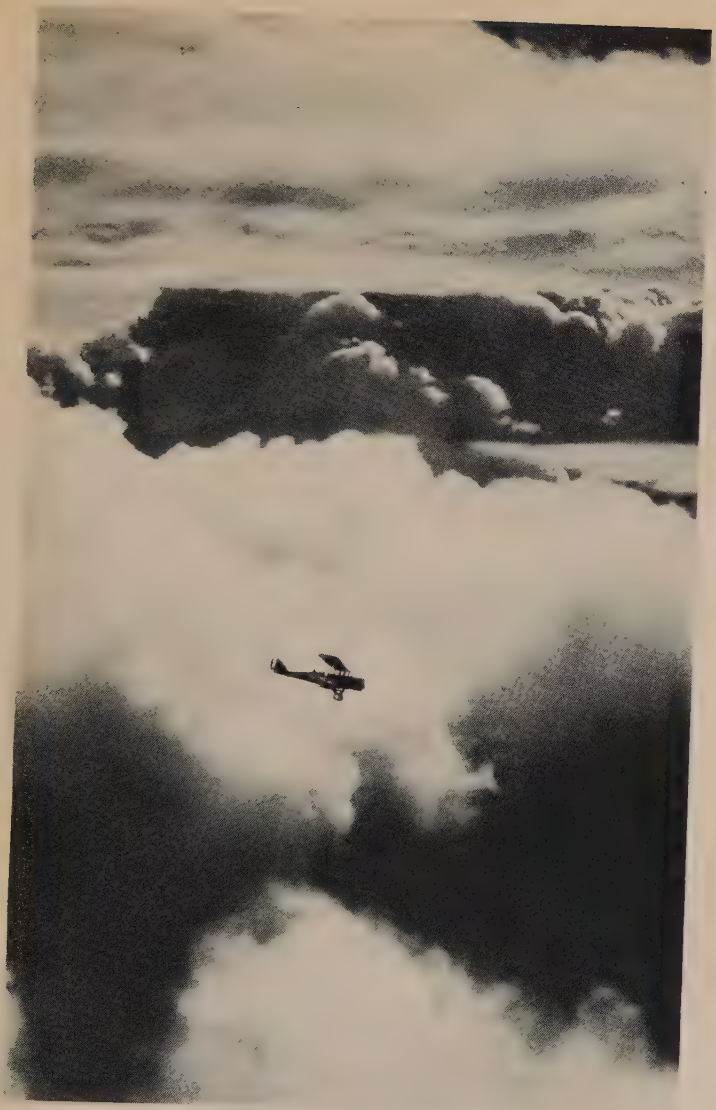
There are, however, many airways in Russia and Siberia. Dornier Comets leave Moscow regularly for the Ukraine and the Black Sea. There is also an important line from Moscow to the Caucasus, Georgia, and the Caspian. They even have passenger planes flying between the larger cities in far-off Turkestan. The Soviet Government intends soon to link up all the important cities both in Russia and Siberia with the same sort of air service that exists between Berlin and Moscow. In the matter of aërial passenger travel, Red Russia is far ahead of all her neighbors, excepting Germany.

Curious to see what present-day Russian rail-

road service was like, we welcomed the opportunity of making the next stage of our tour by train. A sultry summer evening found us jaunting along in a drosky to the Moscow station. To our surprise we found the night mail train excellent, as good as any in Europe. It was well appointed and had first-rate sleeping accommodations. Just as we were about to slip between the sheets the porter entered softly with two glasses of hot tea. In the morning he aroused us in the same way. I much preferred this sort of thing to a jog in the ribs accompanied by: 'Git up, boss. If you-all want to git off at South Bend you gotta git up quick.' The roadbed was smooth, and the wheels were round instead of square. You find the square wheel in many parts of Europe.

The next morning we got out at the station in the old capital of the Czars on the Nevsky. With the ravages of revolution, starvation, and disease and with the seat of government removed to Moscow, Leningrad had faded until it was almost a deserted city. But apparently it is 'coming back.' When we were there the population had again grown to nearly three quarters of a million.

This time we were not headed for any hotel to which it pleased the drosky driver to take us. Walter Duranty had advised us to try our luck at the famous old Hôtel Europe, once the pride



THE WORLD OF MOUNTAINS, ISLANDS, AND TUMBLING CONTINENTS OF CLOUDS

WE CIRCLE FLUFFY PEAKS LOFTIER THAN EVEREST

of Saint Petersburg, and there we went. We could tell that the hostelry had seen better days and once perhaps had been a well-appointed modern institution. But now it was dirty and very little better than the Savoy in Moscow. The clerks were all Government employees and tramped through the lobby and drawing-rooms with big, muddy boots.

Like the few others from the outside world who get to Leningrad these days, we made the pilgrimage to the far-famed Winter Palace, the Hermitage Gallery, and the old Imperial Opera. Throngs of peasants went pouring through the Czar's palace the day we were there, and we were told it was the same every other day. Government guides and lecturers herded the peasants through in parties of from forty to a hundred. For the first time in their lives the simple country folk saw the interior of the great palace of the Czars. The guides harangued them and gave them fragmentary lectures on the history of Russia and the blessings that have come through the Revolution. Weather-beaten women with shawls knotted around their faces, and hulking *muzhiks* stood with mouths open and eyes bulging before the gold throne of Nicholas II and the other marvels of the palace. For the most part the Winter Palace seems to have suffered little damage. We saw bullet holes here and there, and some of the oil por-

traits were slashed and headless. But the other treasures of the palace seemed to have weathered the storm.

Equally great throngs of common people paraded through the marvelous Hermitage Museum. Indeed, it seemed to be a sort of rendezvous for the inhabitants of Leningrad, a place where lovers met and where people came to enjoy the afternoon, just as crowds go to parks in other cities. Presumably few of them knew anything of the works of art on the walls. Names such as Rembrandt, Murillo, Franz Hals, and Rubens meant nothing to them. Nevertheless, it was not an unpleasant sight to watch these throngs of Russian workers in such a setting.

The old Imperial Opera House was used for ballet the night we were there, and the entertainment was by far the finest of its kind we had ever seen. The auditorium was jammed; every seat was taken. But to us the audience was even more interesting than the ballet. There were only two people in that vast assemblage who were in evening clothes. One was a man in a shabby, shiny full dress, and the other a bobbed-haired woman wearing a man's dinner suit.

During the intermission the whole auditorium filed out and paraded around the foyers. Judging by their faces they were nearly all Government clerks and their families, soldiers, and laboring people. Few had the clean-cut faces suggestive of

the upper classes. In fact the most aristocratic-looking person we saw that night was a young woman behind a counter selling apples, cakes, and chocolate bars. I suspected that she might be a woman of culture, so when the throng had drifted back into the auditorium to listen to the wild music of Stravinsky, I spoke to her in English. Apparently she had not heard me distinctly. She replied in German. Then when I made no response she spoke again, this time in French. A moment later we were conversing in English, which she spoke fluently and with the typically English accent of the old Russian aristocracy. I learned nothing of her history, did not try to pry out of her a tale of misfortune.

At the back of the auditorium was the old Imperial box with the Romanoff coat of arms above it. There sat the Czars, the Grand Dukes and Duchesses, and the flower of the Russian nobility in the gay days of old. To-night thirty or forty people occupy that same box, but they do not wear any Czar's ransom in jewels. They are dressed in the clothes of the laboring class, and the girl in the center of the row wears a flaming red Communist scarf over her head. They are all fanatical Bolsheviks, no doubt, and, characteristic of their kind, capable of horrors on the one hand and of heroisms on the other.

I had heard the tale of the execution of three Russian Communists caught in Latvia while on

a propaganda mission. The peoples of the Baltic Republics were bitter enemies of the Soviet régime. In Latvia the policy at the time was to shoot all Bolsheviks as soon as they were caught, so that they might not stir up trouble among the other prisoners. The three were led out to their doom, were blindfolded, and stood in a row. One had a cigarette, and just before they were to be shot down he said to one of the guards, 'You don't mind my having a few last puffs, do you?'

The guard gave his consent and the shooting was delayed while the prisoner took three long, deep pulls on his cigarette, and handed it to the second comrade standing next to him. One of the Latvian soldiers who had been detailed to execute the Reds leveled his gun at the back of the first. Bang — and the man crumpled in a heap.

The second Red took his few puffs, and passed the cigarette on to the third. Bang went the gun, and another figure dropped to the ground. The third Communist remarked stoically, 'Well, I may as well finish this cigarette now.'

And he did, without making any more attempt than the others had made to get away or give the guard a punch and at least have a run for his money. After smoking up the cigarette he threw it down, and then he too crumpled and fell on his face.

Walter Duranty saw the execution and told

me about it to illustrate the stoicism of the Russians, Bolsheviks and all.

We stayed in Leningrad for only two days, and then caught a westbound train for the Finnish frontier. It was almost as difficult to get out of Russia as it had been to get in. In Leningrad our papers had to be stamped by nearly a score of officials and we had to pay a large Government fee for permission to leave the country, a fee larger, in fact, than we had paid for our entrance visa.

Our train this time was nothing like the express on which we made the journey from Moscow. It was little better than the 'forty & eights' in which the 'doughboys' used to tour France from Brest to the Argonne, and not half so good as the poor old 'Atterbury Special' which ran from Tours to Chaumont. The compartments were of the stiff-backed variety, *sans* upholstery, *sans* everything.

At a Russian town just this side of the Finnish border a Bolshevik intelligence officer boarded the train and examined every passenger. For some curious reason he devoted more time to searching us and our baggage than to all the other people on the train combined. He spoke excellent English and was gravely and excessively polite — and how suspicious. He read every single line in our notebooks, and when I joked with him about the way he was wasting

his time reading a lot of incoherent drool, he looked at me solemnly, and from then on read still more closely. None of the entries had been written in Russia, nor was there any mention of Russia. I had in my bag a cheap map of Europe that I had picked up in Lübeck months before. He pounced on it and refused to let me have it back. He even went through our address book and read the name and street number of every single person listed there from Singapore to Pernambuco. It seemed as if he had imagined that his search was going to be more fruitful than it proved to be. At last, dejected and apparently undecided whether or not to examine the cavities of our teeth and strip us, he jumped off the train, and gave orders for it to proceed. I thanked my stars that I had not filled my notebook with observations on Russia. Half an hour after the departure of our polite but sadly mistrustful friend we crossed the frontier into Finland.

As we passed the border line I could not help thinking about another trip into Finland, the story of which I happened to know. I had met Sir Paul Dukes and had heard many tales of his adventures in Red Russia. His had been an amazing career, indeed. After having lived in Russia for some years and witnessed the outbreak of the Revolution, he returned to England when the Bolsheviks took power. Some time

later he wandered through complex passages in an unnamed London building to the hidden sanctum of an unnamed personage — the chief of British espionage. The point of it all was that Sir Paul Dukes was requested to serve his country by returning to Russia as a secret agent to direct British espionage. Rather a rough job for a man of his antecedents, to become a spy and perhaps meet the fate of a spy. A Britisher, however, no matter how aristocratic he may be, is inclined to look upon any affair in the light of a 'sporting thing.' Dukes undertook the mission. He got into Russia through Finland, stealing through the cordon of Bolshevik border guards and in Leningrad picked up the threads of the espionage organization of his predecessor who had recently been caught and shot. After several narrow escapes in a maze of intrigue and counter-intrigue he sought refuge in the Red Army, and there as a rampant Bolo warrior he gathered his information and transferred it to his principals by means of secret messengers. All of the frontier running was done across the Finnish border. Dukes, himself, had occasion to make the trip several times. In one instance he had a hair-raising tilt with death.

The Gulf of Finland was frozen solid. At midnight a horse sled left the land that was Russia and went scudding swiftly across the ice toward the Finnish shore on the other side. The

driver was a smuggler, the passenger the chief of British espionage in Russia. To one side of the speeding sledge was a black mass, the fortress island of Kronstadt. A brilliant finger of light swept across the ice, the Kronstadt searchlight looking for people who might try to get across the frozen gulf. The sledge swerved away and toward the shore to avoid the spying, seeking ray. The beam came rushing across the ice like some weird pursuing demon. A blinding glare in the eyes of the two men and the sled was vividly illuminated. For only a moment, though. The beam hurried on. They were too near the shore to be seen as a black spot on the white of the snow-covered ice. The driver hugged the shore more closely. The tireless ray caught them again, but again the dark shore protected them and kept them invisible.

But they were too near the shore. It had protected them from the searchlight, but it had dangers of its own. From the gloomy woods that lined it a knot of horsemen dashed, Bolshevik soldiers patrolling the edge of the land. A mad chase across the ice, horsemen after sledge. The horsemen gained. And now the crack of carbines. Bullets whizzed by the fugitives. The driver of the sledge whipped up his horse with despairing efforts. The sledge swung suddenly around. The driver had got the reins caught in the shaft. The Red Guards came galloping up.

PLANES LEAVE MOSCOW ON REGULAR SCHEDULE FOR THE UKRAINE, THE BLACK SEA, AND THE FAR-OFF BORDERS OF THE CASPIAN

IN THE GULF OF FINLAND WE FLY BY A BARREN ROCK BEHIND WHICH THE FLEET OF THE CZAR ONCE RODE AT ANCHOR

THE LATEST SPORT IN FINLAND
Skiing by airplane

The driver saw before him a jail sentence for smuggling. For Dukes it was the firing squad.

But now the Englishman had slid onto the ice. What would be the Bolo's first impulse, to pursue a fugitive or fall upon a sledge, doubtless a smuggler's and probably filled with possible loot? He scurried across the ice and got a start. The Reds dismounted around the sledge, examined it for a moment, and then got onto their horses again, and started after the fugitive, who, in running across the white snowy surface of the ice, would be spotted at once.

A stiff wind was blowing. In places the snow had been swept away and the ice was bare and black. Dukes's clothes were dark. He threw himself down on one of the dark places. The sound of voices approached. Dukes, in his flight, had avoided the wind-swept places, dark and slippery. So did the horsemen avoid them. The Bolos went this way and that looking for a figure running across the white. The dark space in which Dukes was hidden was a large one, and they never came near enough to spy him.

Finally they gave it up and returned to shore. A man arose and started to walk the thirty miles across the ice to the Finnish shore. Eight hours later a weary, bedraggled figure stumbled up the steep bank that was Finland.

Our passage into Finland was a nuisance, but nothing like so exciting as that.

At the first little station on the other side of the line we could easily tell that we were no longer in Russia. The station was spotlessly clean. The food at the café was so delicious in comparison with what we had had in Russia that we wanted to spend the evening feasting ourselves. But a splendid Finnish train was waiting, and we boarded it for Helsingfors, whence we hoped to fly to Esthonia and Sweden.

CHAPTER XXIII

ACROSS THE ICE FIELDS FROM FINLAND TO ESTHONIA

From Helsingfors, Finland, we planned to make two flights, one across the ice fields of the Gulf to the little known and seldom visited new Republic of Esthonia. The second, a far longer hop across northern seas to Sweden.

The Elijah of the Finns is Herr Bruno Lucander. He is the moving spirit in civil aviation in this progressive country, and the very next morning after our snail-like journey out of Russia he assigned us seats in the plane bound for Esthonia. But he did even more than that. It seems that, before our arrival in Helsingfors, he had heard through his colleagues in Berlin that we were making a tour of all the air routes of Europe, a thing never before attempted, so he generously arranged for his Esthonian plane to make a one-hour détour before hopping the Gulf to Reval. Herr Lucander correctly guessed that we should be delighted to have a look at interior Finland from the air.

The station for seaplane service at Helsingfors is near the center of the city, at one of the quays. The water off the Finnish coast is quite deep. There are few shallows. That is one reason why

the shore line is so trim. No unsightly piers extend out into the water. Instead there are stone quays at the foot of some of the main streets. In nearly all European centers that are on the commercial air routes, the companies operating the planes provide busses to take passengers to the flying-stations, which are usually five or ten miles out, sometimes twice that far. At Helsingfors, though, since the station is within easy walking distance of the main hotels, the passenger takes his own way, either afoot or by taxi.

Packing our bags, we took a cab, sped through the market-place, and a moment later arrived at the air station. The market-place is the center of activity in every Finnish town. There, daily, the fishermen bring their catches and the farmers their produce, and the local housewives come to bargain and buy. There are innumerable booths tended by stout, rosy-faced women who preside over the most enticing heaps of vegetables and fruits. While passing through the market-place I saw some carrots, so inviting that I couldn't resist them. One doesn't usually think of carrots as alluring, but I couldn't subdue the temptation to buy a few and munch them in the plane.

The machine in which we are to make this flight is a big all-metal Junkers monoplane, like so many others in which we have flown, except that this one has pontoons. We clamber aboard

and take our places in the cabin, and soon the motor is roaring and we are taxi-ing across the harbor. Then up we zoom over the edge of the ice field, which, although it is May, still forms an impassable barrier for steamers from the outside world.

We see a figure standing on the pier waving us a cheery bon voyage. It is Bruno Lucander. He is a jovial viking, and no wonder. His is said to be the only air line in all Europe that even pays expenses. The conditions away up here in the land of the midnight sun happen to be ideal for commercial flying.

Directly south, fifty miles across on the other side of the Gulf, is Reval, capital of the vigorous young Republic of Esthonia. The commerce between the two cities is considerable, but for many months during the long dark Arctic night the Gulf is frozen over. Then all travel is by air, and planes flit back and forth at frequent intervals, making the hop in a mere thirty minutes.

The distance between the capitals of Finland and Sweden is approximately four hundred kilometers as the crow flies, and more than that number of miles aboard a steamer that is obliged to zigzag in and out among the islands, instead of jumping over them. Passenger boats make the trip in twenty-four hours — when they are able to make it at all. But via the air we make it in about one tenth that time! For eight out of

twelve months of the year navigation in the Gulf of Finland is a dubious proposition.

The snowfall in the winter is heavy and continuous, and the ice accumulates in great drifts and packs in the Gulf of Finland. When it freezes solid, navigation is stopped, and then ships put in at Aabo on the Baltic Sea, Finland's ancient capital and second most important harbor. Now, on the 20th of May the port of Helsingfors is still ice-bound, and to-day the first ice-breaker is attempting to force its way through and clear a path for ships. We are told that it is about a hundred miles west of here, near the strait where the Baltic and the Gulf of Finland merge, bumping its sturdy, reënforced bow against the frozen crust of the sea. All of this, of course, plays right into the hands of the flying Finns, and increases the receipts of Director Lucander's company. Nowhere in Europe can you save more time by passing up a railroad journey in favor of the flying-machine. Even when the passenger steamers are running, the planes are filled every day. On most of the European skyways, during a large part of the time the planes carry less than half the number of passengers they can accommodate. But from Helsingfors to Reval and on the longer route between Sweden and Finland, seats in these all-metal Junkers monoplanes are at a premium and often must be booked days in advance.

We are wheeling around in wide circles in order that we may get a better view of Finland's picturesque capital. It seems to be the fashion to call things up here in the North after other things in the South. Many travelers and writers refer to Stockholm as 'The Venice of the North,' and to Helsingfors as 'The Gibraltar of the North.' As we crane our necks and look almost straight down through the cabin window, we see that the city is indeed strongly situated on a rocky peninsula that juts out into the Gulf of Finland. But it is no Gibraltar despite the fact that nearly every one of those rocky islands down there surrounding the harbor has its grass ramparts and modern fort with disappearing guns. The largest one is known as the Fortress of Sveaborg, almost as strongly fortified as grim Heligoland before Germany was brought to her knees.

This panoramic view of Helsingfors from aloft confirms the verdict we reached when we walked through the streets this morning, that the capital of Finland could more appropriately be dubbed 'Europe's Ultra-Modern City.' For the most part this city looks brand-new. Of course its importance goes back for only a hundred years. If you are in quest of ancient glories you must visit old Aabo where the viking kings and the modern dukes of Finland lived and ruled until the beginning of the nineteenth century. While

Aabo is a miniature Stockholm, built among islands, river, and canals, with all the charm of ancient things including a cathedral nearly a thousand years old, the newness of Helsingfors spread out beneath our wing is neither crude nor raw. Finland has developed the most characteristic type of Northern architecture. It runs toward massive simplicity and civic grace. In Helsingfors you see few of those square, warehouse-like buildings that disfigure so many of our American, Canadian, South African, and Australian cities. Angles that would otherwise be crude and unlovely are rounded off to an austere curve and a tendency toward the arch.

That railway station down there, for instance, with the two stone giants holding up its portals, is symbolic of Finland's vigor and strength. If it is not the handsomest railway station in the whole wide world, I miss my guess. To me it is even more satisfying than either the impressive Pennsylvania or Grand Central in New York, or the huge Banhof in Leipzig, or the Union Depot in Chicago, or even the spectacular Victoria Station in Bombay. For sheer beauty of line and form the station in Washington, D.C., is about the only one comparable to it. The lofty tower, which stands out as the principal landmark of Helsingfors when you view it from the air, is of a sort of modernistic Gothic, rather in the mood of the new German impression-

istic architecture, but without being so freakish.

This short flight into the interior of Finland confirms the decision that my wife and I have already reached that some day we are coming back to make a longer trip through Scandinavia. It will not be by any usual route. Perhaps airplanes will be flying back and forth across the Atlantic when we are ready, and if so we shall descend from the sky on either the south coast of Norway or of Sweden, and then travel overland to where these countries adjoin Finland in the Far North, above the Arctic Circle. Then with the midnight sun to light us on our way as it did in the old days up on the Yukon, we shall spend a week or two among the Lapps and reindeer. But the trip south from the Arctic Circle to the Gulf of Finland by way of this very forest and these lakes beneath our plane will be the main attraction.

When we discovered in a tourist folder at the hotel last night that official Finnish statisticians claim there are 50,000 lakes in this far northern republic which only covers a total area of 132,642 square miles, we were skeptical and wondered how they found time to count them all. But as we look down on the interior of Finland from the air this morning, we are ready to swear that the statisticians underestimated the number of lakes. More than one eighth of Finland is

covered by these inland waterways, and what a complicated network they form!

Of course the prehistoric geological happenings in this section of the world are to blame. When that celebrated northern ice cap of the glacial age came sliding down from the Pole, geologists tell us that it remained longer in Finland than anywhere else. The geological wise men say that it left here only a little while ago — a mere fifteen thousand years or so. At any rate, when the tremendous glacier pushed down over Finland, it flattened it out and made a table of it, not quite level, but scooped out here and there with countless holes.

Then the Ruler of the Universe blew a breath of warm air over the Northern Hemisphere and the ice cap receded. It melted at unequal rates of speed, say the sages, lingering longer in some places than in others. This caused a further unevening of the surface. Huge deposits of boulders were left, and channels cut by watercourses were caused by the melting ice. So to-day Finland, with its green forests and glistening lakes, from up here among the clouds looks a lot like a huge pockmarked billiard table. The journey we hope to make some day will be nearly all by water. Finnish guides will pick us up in the land of the midnight sun and our canoes will thread their way through mazes of connecting lakes.

Shooting the 1442 cascades of Finland is a

national sport. Thousands of people go north from Helsingfors and Viborg annually to enjoy the wild beauty of Imatra, Europe's greatest cascade, and some even to adventure in a boat down its swift flood. As with our own Niagara, an unfortunate wight now and then becomes hypnotized by the wild beauty of the mad water and leaps in to be dashed down along with the tumultuous swirl. There are cases on record of would-be suicides who have survived this dizzy course and have emerged at the bottom of Finland's greatest cascade, chastened in spirit, somewhat battered in body, but delighted at still being alive.

Our journey from Lapland to the Gulf of Finland by canoe will include shooting many rapids, but none quite so frenzied and impetuous as Imatra, which the pilot has just pointed out to us half hidden in the forest below.

When we fly back to Helsingfors, the plane continues on south over the Gulf without descending again. The distance across the ice field is a little less than fifty miles and we make it in a bare half-hour. When we reach the Esthonian coast, the pilot circles several times over Reval in order that we may get a good look at the city. The population is less than half that of Helsingfors, which is inhabited by some 200,000 Finns and Swedes.

Esthonia, along with Latvia and Lithuania,

was one of the three Baltic republics, formerly a part of Russia, that set up governments of their own during the first few months after the termination of the World War. It is a tiny country, covering only a little more than 18,000 square miles, a trifle larger than Denmark, or about twice the size of Massachusetts. It is inhabited by about 1,100,000 people, of whom 92 per cent are Esthonians along with a few Russians, Germans, and others. Her sister republic of Latvia is about one third larger, and Lithuania, still farther south on the Baltic, is three times as large. It is a land of forests, farms, and peat bogs.

During the few minutes we stop at the flying-field to fill up our tanks for the return flight, our pilot tells us of an American traveling salesman who made this same air journey from Finland last summer. This enterprising ambassador of commerce had several sample trunks. With true American haste he was eager to get across the Gulf of Finland to Esthonia and back in the same day, so he chartered two airplanes, one for himself and the other for his sample trunks. He dropped down out of the sky at Reval and so impressed the Esthonian merchants with his pep and enthusiasm that he took many orders and then winged his way back to Helsingfors. Although planes have been flying regularly over this short route between Finland and Esthonia

for several years, there have been no fatal accidents. The nearest approach to it was one day when a single-engined monoplane developed motor trouble over the heart of Reval. The plane nose-dived from a low altitude and crashed right through the roof of a house without seriously injuring either passengers or inhabitants.

We get back to Helsingfors in plenty of time to have lunch at an open-air café, listen to the band play in the main square, and then leisurely walk down to the airport to catch the afternoon plane for Stockholm. It was both amusing and pathetic to watch how the people here try to rush summer. You would scarcely expect a land so far north to be a place where outdoor cafés would be popular, but Helsingfors has many of them. They seem to represent the unconscious desire of the Finns to convince themselves that their country is a good deal more summery than it really is. So we sit with them as they crowd the open-air eating and drinking places, shivering a little, perhaps, and eating ice cream with their overcoats on. This is as far north as we shall get, and from now on each flight will take us farther and farther south until a few weeks hence we expect to look down on the Riviera, skirt the romantic coast of Spain, and then fly over the Sahara.

CHAPTER XXIV

THE FIRST SEAPLANE TO BE SHIPWRECKED ON A CORAL ISLAND

We have ascended to an altitude of nearly five thousand feet and the forts and shipping of Helsingfors are disappearing far astern. Beneath our right wing are the forests and lakes of Finland. Far off to our left, the shores of Esthonia. Behind us, mighty Russia. Under us, the cracking ice field of the Gulf of Finland. Up ahead there is ice as far as we can see. But it offers no obstacle to our flight. Even if our motors fail, Pilot Lihr could easily glide down from this height to one of those stretches of open water which we see here and there in the lee of an island.

This is the same sort of spectacle that Commander Byrd and his pilot, Floyd Bennett, beheld on their historic round-trip flight from King's Bay, Spitzbergen, to the North Pole and return; a scene of ice, ice, ice, much the same as that which unrolled beneath the envelope of the Norge when Amundsen, Ellsworth, Nobile, and their companions made their journey across the top of the world from Spitzbergen to Alaska. But ice offers no problem to us — so long as we remain up here in the air, a mile above it!

Along the shore below us are myriads of islands, like black dots on a frosted cake. Finland is not only a land of lakes and cascades, but it also includes an endless host of islands. Countless thousands of them lie off its southern shore.

Before we started from Helsingfors, and while we were strapping ourselves into our seats, Pilot Lihr shut off the motor, slid back the little window between cockpit and cabin, to tell me that, during the flight and before reaching the open waters of the Baltic, he would drop down nearly to sea-level, and enable us to take a few close-up pictures of the ice.

We get away from Helsingfors right on the dot of three, Eastern European time. Before we reach Stockholm we shall have to set our watches ahead an hour, because on our jump across meridians we are flying with the sun. According to schedule we are due at four-thirty — early afternoon at this season of the year in these northern latitudes where the sun lingers above the horizon until ten o'clock.

It is three-thirty now, Helsingfors time. We have flown for a half-hour over the ice field and the thousands of islands. That long finger of land which has just flashed beneath us is Hango Peninsula. Below us now are the waters of Hango Vestra Fjord.

We are losing altitude rapidly. Lihr has almost shut off his throttle. Evidently this is to

be my chance to photograph the ice from the cabin window. Now we are only about a hundred feet above it. The frozen gulf no longer looks like a smooth white floor; instead it is made up of vast hummocks of ice as bumpy as a stretch of boulder-strewn country in the path of a receding glacier. But the spring thaw is on and the ice is breaking up with here and there stretches of water extending for a mile or two. We have just flown by a fleet of a dozen or more sailing ships. They look as though actually frozen into the ice pack, but apparently they are slowly working their way toward Helsingfors. They are creeping along under full sail, splitting the ice as they go. Several are caught so tight in the pack that members of the crew are walking alongside. While it is taking us three hours to fly over this route, I suppose it is taking those patient old windjammers at least three weeks or even longer.

Mr. Lucander told us in Helsingfors that ships are often caught in the Gulf of Finland and frozen so tight that they cannot move for months. He said they frequently run short of food and fuel, and as a result planes fly out and drop supplies on the ice for them. I wonder what it would be like if we had to make a forced landing down there, and if other planes were unable to find us for a week or two. An airman with whom I flew out in Egypt during the last year of the World War was one of the first, if not the

first man ever to be shipwrecked in a seaplane. His adventure was one of the most picturesque I have ever heard of. This flier's name was Captain Guy Smith, and although I found him serving with the British Royal Naval Flying Corps, he was an American.

I had been spending some time with the British naval forces defending the northern end of the Suez Canal, and from time to time I went out with seaplanes to scour the waters of the Mediterranean. From five hundred or a thousand feet up, the pilots and observers would peer down deep into the blue depths, hoping to spot lurking U-boats. One of the men with whom I made such a flight was this Captain Smith. He said nothing about his nationality, but somehow his accent made me suspect that he might have lived in America, despite the fact that I knew he had been with the British for a long time and most of his expressions were as British as Bow Bells. One morning I asked him where he hailed from, and he laughingly replied that his home was in Berkeley, California, and that his father was a prosperous grocer in that far-off California city. Then in answer to more questions he told me the following tale of how he came to be with the British Naval Air Corps chasing U-boats in the eastern Mediterranean.

It seems that his father held high ambitions for him. He wanted him to have more of an

education than experience behind a grocery counter affords, so he sent him to the University of California. But young Guy was restless. He soon quit college, ran away from home, went to Mexico, and became a gun-runner, helping to sneak rifles and ammunition across the Rio Grande. Then in 1914, when the World War broke out, he jumped north from Mexico to Canada, where he enlisted in the famous 'Princess Pat's.' This got him across to England in a hurry. But when he reached London, he managed to wangle his way out of the infantry and enroll as an aviator. After completing his flying training, he was sent out to Egypt, where for nearly a year he piloted a plane on long-distance bombing raids up and down the Syrian and Palestine coasts. From Egypt his plane was taken south through the Suez Canal into the Red Sea, on board a warship. Here for months he flew up and down the Arabian coast, bombing the Turkish garrisons from El Wejh to Mecca. Then one day news came by wireless that the famous German raider Wolf was playing havoc with shipping in the Indian Ocean. So Smith and his plane entered the Indian Ocean on the deck of the British cruiser Raven. He was flying a two-seater now and his observer was an Englishman named Meade. Every day they would take off the deck for a flight over the Indian Ocean to see if they could spot the elusive Wolf.

One day, when they were on a reconnaissance jaunt, they were so interested in scanning the horizon that they lost sight of their mother ship. Round and round they circled, but the Raven seemed to have been swallowed up in the vast expanse of the Indian Ocean. It was early evening and they found themselves above a group of islands. So Smith cut off his motor and glided down to the largest one in sight. The two airmen pulled the plane up over the coral reef, so that it would not be swept out to sea during the night. The island seemed uninhabited. But they slept on the lower wing of their plane, ready to protect it if necessary. During the night a hurricane swept in from the sea and they were drenched through. When morning came they looked around to see if they could find anything suitable for food and finally shot down some cocoanuts with their machine gun.

Then they tried getting their plane back over the coral reef. Smith was at the throttle. Meade, wading through the water in order to lift the tail of the plane over the jagged coral, barely succeeded in clambering up on the fuselage when Smith opened up and took off. It was a close squeak for the observer.

They circled around in the sky for about an hour, but saw nothing of the Raven, not even a wisp of smoke. Then they ran out of gasoline and *had* to come down. They were flying at an

altitude of more than ten thousand feet, and from there they could see many islands which they had not spotted on the previous afternoon. Picking out a still larger one, Smith glided toward it. He landed in a good-sized bay, hoping that a motor-boat would put out to tow them ashore. Their plane was helpless now, and it was impossible for them to taxi across the water to the shore in the usual way. No motor-boat came. The plane was rapidly being swept to the open ocean. So the only thing left was to abandon her and swim ashore. Poor Meade couldn't swim. But the plane carried a tiny balloon and Meade tied this around his neck. Both men hurriedly jerked off their clothes and left them in their cockpits, Smith keeping only his flying-helmet, and Meade, for some curious reason, taking his shoes along. Smith was a powerful swimmer and managed to help his observer to reach the beach.

Once on shore they found a group of huts just a few yards from the beach. In front of each was a lighted fire. But not a soul was in sight.

The fliers had no idea where they had come down. Had they known, the knowledge would not have lessened their anxiety. For this island was one of the Maldives, a group which lies between the coast of Africa and Ceylon. The Maldives are far distant from any of the shipping lanes and many of their primitive negroid in-

WE PASS A FLEET OF SAILING BOATS BUCKING THE ICE

WE LEAVE THE LAND OF THE FINNS BY THE SKY ROUTE ABOVE THE FROZEN GULF

TWO HOURS AND A HALF AFTER LEAVING HELSINGFORS, FINLAND, WE ARRIVE OVER STOCKHOLM

habitants had never seen a white man. When they suddenly saw a huge bird swooping down from the sky and then two strange beings jump out and swim ashore, the savages of course thought it was a miraculous visitation from heaven. So they 'beat it' for the cocoanut grove.

Smith and Meade were exhausted from their swim, but they went around to all of the huts hoping to find some one. After appeasing their hunger with rice and dried fish which they found in one hut, they threw themselves down inside another and fell asleep. In the middle of the night they were aroused by noises and awoke to find themselves surrounded by black people. Smith was a quick-witted, nonchalant sort of chap who could keep his wits about him in almost any kind of emergency, so he said: 'Salaam!' This is the most universally used word in the East, understood by people who speak all sorts of different languages. It is merely a word of greeting like 'How do you do.' But the islanders apparently had never heard it before, and at the sound of Smith's voice they ran out of the hut and disappeared into the cocoanut trees again.

Next morning, when Smith and Meade woke up about daybreak, they stepped out of the hut just in time to see the villagers clambering into their canoes and pushing off from the island. The natives evidently thought the fliers were

white gods — or devils — and they decided it might be best to take no chances. For nearly a week Smith and Meade lived here alone. They had plenty of food. There was no shortage of cocoanuts and in every hut were stores of grain. But the strain was telling on Meade, and he went temporarily insane, spending hours running up and down along the sandy beach waving a rag from a long pole.

On the sixth or seventh day the curiosity of the natives, who had decamped to a near-by island, got the better of them and they paddled back quite close to the beach to have a 'look-see.' Smith, who was a strong swimmer and had lived a semi-aquatic life on the shores of San Francisco Bay, plunged into the water, swam quickly out to the boats, and clambered into one of them. He made signs with his mouth to indicate that he was hungry. The islanders saw that he was a human being quite like themselves despite the fact that his skin was many shades lighter. Their fright faded and they went ashore for Meade.

Then the whole flotilla of canoes, with the two aviators aboard, paddled off to another island which was inhabited by many more people than the one where the airmen had descended. Smith and Meade were quartered in a *long house* where the bachelors dwelt. The natives evidently were unwilling to trust them too near their

women-folk. Here Meade partially regained his health, and they lived comfortably for nearly a month. Guy Smith was a cheery soul, full of the ragtime melody that had been sweeping over America. He spent hours singing to himself, just for something to do. Then of an evening the natives would crowd around and urge him to sing to them. Smith did this night after night, and what a sight it must have been! A runaway American youth who had joined the British Royal Naval Flying Corps, shipwrecked on a coral island in the middle of the Indian Ocean, singing American ragtime songs to naked savages under the cocoanut palms, dressed in nothing but a flying helmet!

After a while Smith got a little fed-up with being the prima donna of this Indian Ocean isle. Meade was not a particularly agreeable companion because he was a rather silent fellow and knew no parlor tricks. But he did have a set of false teeth, and one day some of the natives saw him remove the teeth from his mouth. From then on Smith's star waned. The islanders came from far and near to see the amazing white man who could remove his teeth.

After the boys had lived on this island for nearly a month, the natives took them to a still larger island, this time to the largest island of the group. Here they were turned over to the Sultan and given a warm welcome. But much to the

distress of Smith and Meade they were kept prisoners in the royal palace, a rambling building made of blocks of coral. The Sultan, it seems, had a wider knowledge of the outside world than most of his people. He knew a little about foreign governments, particularly the British. In fact he had copied the British to the extent of establishing a Maldive Parliament made up of an upper and a lower house. As a special honor to his two white visitors he dressed them in the uniform worn by the members of his House of Lords, a red skirt reaching to the knees, a scarlet jacket, and a tall red stovepipe hat about twice the height of a Turkish fez.

No one on the island could speak a word of English, so the boys never knew what their fate was to be until finally one day the Sultan and his staff came and escorted them down to the beach. Here they were ushered onto a rather large native sailing dhow loaded with cocoanuts. The dhow sailed, and the next thing the fliers knew they were off the coast of Ceylon.

When they reached the city of Colombo, lo and behold, there was the cruiser Raven lying in the harbor. The two shipwrecked fliers were still dressed in the curious costumes of the Maldive House of Lords and their faces were half-hidden by straggly beards. As they walked up the gangplank of the Raven, no one recognized them.

Afterwards they discovered why they had been treated so well by the savages. It seems that many years ago the British Government made a treaty with the ruler of the Maldive Islands. This treaty provided that the British would protect the Maldives from any aggression and from being annexed by any other foreign power. In return the Maldive people were to extend their hospitality and protection to any shipwrecked mariners who might be cast up on their lonely shores.

The mysterious, heaven-sent mishap to Smith and Meade was the very first time since the signing of the treaty that the Sultan of the Maldives had had an opportunity to carry out his part of the compact. This was why he had kept the fliers in his palace. He simply wanted to make quite sure no harm should befall them.

When Smith and Meade told their story to the commander of the Raven, the cruiser immediately steamed off to the Maldives in the hope that the seaplane might still be found. But before leaving Ceylon the two airmen bought many little gifts, wrist watches, safety razors, mirrors, and boxes of candy for the people who had entertained them and virtually saved their lives. When the cruiser reached the islands, Smith and Meade handed out their presents, and Smith told me that he gave one particularly charming Maldive belle a box of chocolate

bonbons each of which was wrapped in tinfoil. Later on he caught sight of her, out of the corner of his eye, gobbling down chocolates tinfoil and all.

They found the seaplane. It was high and dry on a coral reef near one of the smaller, uninhabited isles. It was salvaged, taken back to Suez, repaired, and put back in service.

Smith told me this astounding yarn in an offhand way as though it was nothing much after all. He even produced the costume which he had worn as a member of the Maldive House of Lords, and I got him to put it on so that I could take his picture one morning on the beach in front of the Casino Hotel in Suez. Still, the story was such a wild, fantastic tale that I was skeptical about it. I thought perhaps Smith's experiences as a gun-runner in Mexico had keyed up his imagination. But months later, upon reaching London, I visited Royal Air Force Headquarters, dug up the files, and there found the official report on the whole affair. I also succeeded in getting the address of Lieutenant Meade, the observer, who had been invalided home to Kent. I wrote him a letter, told him that I had been flying out East with a lot of his old pals, and asked him if he could run up to London and have lunch with me one day. He came up and we talked over mutual experiences out east of Suez. I said nothing about having

met Captain Smith, but I did tell him that I had heard of his being shipwrecked in a seaplane. In this way I lured him into telling me his version of the story. It was identical with the account I had heard from the lips of Guy Smith, the cheery American soldier of fortune. Surely no more amazing yarn came out of the World War than this story of the adventures of two airmen shipwrecked in a seaplane in the middle of the Indian Ocean.

Four-forty-five. We are due south of the Aaland Islands. For the first time on this flight we are out of sight of land. The ice field in the Gulf of Finland has also dropped far astern. We are above the spot now where the Baltic, the Gulf of Bothnia, and the Gulf of Finland come together.

Far to the north we can just make out the outline of the larger of the Aaland Islands. Although a little nearer the Swedish than the Finnish coast, in 1921 the two countries agreed that henceforth the Aalands should be considered a part of Finland. There are twenty-five thousand people living on the islands and all are Swedish-speaking. But this is of little significance, for many of the inhabitants of Finland speak Swedish as their native tongue. Moreover, the Aalands are of great strategical importance in connection with the defense of the Finnish coast.

Ahead of us now lies the rocky coast of Sweden, so we are rapidly nearing the end of this flight. Russia, from whence we have so recently come, now seems a long, long way off.

It is difficult to tell just where the mainland of Sweden begins, because we are passing over myriads of islands just like those we left behind along the coast of Finland. But there are so many little towns, villages, old castles, and modern villas on all these islands that we surely must be nearing the spires and towers of Stockholm.

These waterways beneath our wing were once the rendezvous of viking ships. The capital of the Swedes lies at the point where an arm of the Baltic joins Lake Mälar. My wife has been glancing at a book on Sweden on the way over from Helsingfors and she has just shown me a page telling about the origin of Stockholm. According to a legend handed down from the Middle Ages, robbers entered Lake Mälar and destroyed the viking city of Sigtuna during the twelfth century. The Swedes then set a log adrift in the lake, deciding that where it should find a harbor there would they establish a new city.

Ah, there's Stockholm just ahead of us! If the old legend is true, then surely the gods of the Norsemen were guiding that log, because the panorama before us is one of the most glorious in all Europe.

CHAPTER XXV

ACROSS THE BALTIC BY AIR

FROM the 'Venice of the North,' or the 'City of the Vikings,' whichever you prefer to call it, we fly back to Germany.

A twenty-minute automobile drive through the suburbs of Stockholm brings us to Lindarängen, a combination land and water airport. It takes the cheery, half-apologetic Swedish passport and customs officers only a moment to mark our handbags. They seem to think it the height of discourtesy to bother us at all. Apparently they still look with awe on travelers who journey by air — a thing they themselves have never done, despite the fact that they are employed at an airport.

Porters seize our bags, books, maps, and camera, and lead us down to the pier, where we find a huge one-winged Dornier-Wal, with her Rolls-Royce motors idling and her long hull swaying with the ripple of the waves. Captain Florman, the debonair managing director of the Royal Swedish Air Lines, assists the lady passengers up a few steps onto the hull of the flying-boat, from whence, through a small hatchway, we descend four or five steps into the roomy cabin.

At eleven-fifty-five the chief pilot opens up the throttle, we stuff our ears with cotton, and the huge plane spurts across the water like a racing sea sled. As our speed increases, the water dashes against the windows, and a moment later we are bounding from wave to wave. Our run over the water continues for at least a quarter of a mile. Suddenly the bounding stops and we rise into the air. At an altitude of about five hundred feet, the pilot banks to the right and we head straight for the center of the city, as if by some freakish fancy he intended to alight in the Drotting Gatan. However, we are on our way toward Kalmar, the halfway port down the coast where we are to lunch before flying on across the Baltic.

Stockholm from the air is a glorious sight. To look down on the vast Skansen Djurgorden Park and real Lapp village, and then on the palaces, waterways, and shipping of Stockholm, sends a thrill along your spine. We are flying so low that we can look right into the courtyard of the King's palace, and imagine ourselves peeking in at the window where Prince Wilhelm, the explorer and writer, is assembling scientific data from his recent expedition to the 'Mountains of the Moon.' The harbor here reminds us of that at Sydney, Australia. The arms of the sea, where Lake Mälar and the Baltic join, along the shores of which this city is built, also look like a huge leaf, just as does Sydney. The Royal Palace on

its little island is fairy-like and unreal when seen from the sky, and even more so is the Stadthuset, Stockholm's city hall, said to be the finest building erected in Europe in the past one hundred years.

For the next ten minutes we fly above isle after isle, each built up with suburban homes, freshly painted, two-storied and with spick and span launches, canoes, and yachts on every beach. At twelve-ten we are crossing over land, but always with a lake or arm of the sea within gliding distance. Then for a few minutes we are above a wide stretch of rocky country covered with forest except for bare cliffs here and there. These Dornier-Wal flying-boats are propelled by twin Rolls-Royce engines, and now, while we are in the middle of this unbroken stretch of forest, one of them begins to miss badly. It stops altogether. We are losing altitude rapidly. This is one of the times when it would mean much to the passengers if the crew in the cockpit could communicate with those in the cabin by means of a speaking-tube of some sort. It seems to us as though we may be in danger of a crash. On the other hand, the pilot may have cut out the motor intentionally. We hope so. At any rate, we are dropping nearer and nearer the earth, and it looks as though it will be impossible for us to reach the distant water. No one speaks. Every one looks tensely out of the windows and

clings each to his chair, that instinctive action which you always see among aërial passengers when something seems about to go wrong. But our long glide carries us over the last stretch of trees, and just as we clear the topmost branches, by a bare thirty or forty feet, the second engine picks up, and all is well again. So after all the pilot probably knew his distance so well that he was merely conserving fuel by cutting off one motor.

At twelve-twenty we are again passing rapidly from land to water eastward along the Swedish coast and in sight of the first farming country we have seen since leaving Stockholm. There are stretches of green fields back of the shore. Scores of rocky, pine-covered islands jut out of the water on all sides and the country reminds us of the coast of Maine. Just a half-hour out from the airport we catch sight of the vast unbroken expanse of the Baltic. We are swinging south now over hundreds of tiny, forest-clad, rocky islands. The sky is entirely overcast and for a change the weather has turned bitter cold up here at three thousand feet.

Rather thankful at the prospect of getting away from the mainland, we settle back in our comfortable armchairs. There are accommodations in this big cabin for ten passengers, and seven of the chairs are occupied. Our fellow travelers all appear to be Scandinavian. One is

a middle-aged lady clinging to an enormous bouquet of roses and carnations. This is her first flight, and evidently she is not familiar with the old superstition among airmen regarding carrying flowers in a plane. Many fliers refuse to take flowers because they say it is flirting with fate. Of course the superstition is rather far-fetched, but many of them hold to it nevertheless. Flowers are associated in their minds with funerals, and therefore are likely to bring about a crash. When I glanced at this lady's bouquet I could not help thinking of the time when at St. Louis I gave up my place in a two-seater army plane, in which I was making a flight from San Francisco to the Atlantic. The Army World Fliers were to be welcomed there at a great celebration, and I had intended to watch the festivities from the air. One of the members of the reception committee wanted to take up a huge bouquet and drop it from the air on the fliers just at the moment when they were being received on the ground by the Mayor of St. Louis. I offered him my place in the plane. Major Corliss Moseley banked steeply, so it would be easy for the official to drop the bouquet. But when he threw it from the cockpit the rush of air from the propeller shot it back into the rudder and elevator wires, where it stuck and jammed the controls. For a few minutes it looked as though the plane would remain un-

manageable and crash. Fortunately the flowers slipped out of the tail assembly just in time.

To have one's picture taken just before a flight is another sign of bad luck, and many a pilot will object violently if any one tries to snap him just before he takes off. The 'last flight' is still another. It is claimed that the records show that a hugely disproportionate number of pilots are killed on the last flight before leaving a certain field, or the last flight upon going away on a vacation, or the last flight before being discharged from the Air Service — or before almost any occasion. Armistice Day claimed a sad list of victims, including Hobey Baker, the famous Princeton football star, who was killed while celebrating the end of the fighting. Fliers are divided on the significance of the number thirteen, some holding that it is bad luck and some good luck.

The horseshoe, of course, still brings good luck. In the Royal Flying Corps during the War, one of the most powerful charms was a little golden horseshoe of complicated design. It is related that a well-known British cavalryman of the clouds, on his way to Poland to serve against the Bolsheviki, was presented with one of these magical talismans by a mysterious woman. In Poland he made a splendid reputation as a daredevil. His plane, day after day, was perforated by Bolo bullets, but he was never scratched and

never even made a bad landing. One day some pressure or other broke his little horseshoe. He went up that day. Shrapnel fragments wounded his legs badly, and he grew so faint that he crashed in landing and was further injured. After that he was shot down twice and had several crashes. To-day he wears three wound stripes which he earned after he had broken the magical luck piece.

Vernon Castle never went aloft without his cane. He was carrying it when he was killed. A Polish aviator carried with him a singular pet, an imperial Pekin drake, to accommodate which he had a small box built in his plane. 'Taffy' Jones, one of the most skillful of Welsh war fliers, always made it a point to attack an adversary with a left-hand turn. Whether it was the luck or the sound strategy of the maneuver, Taffy stands credited with thirty-six victories.

The most beautiful token of all comes when a plane approaches a summer cloud. The shadow of the machine may be seen on the billowy mist, and around it is a delicate, shimmering rainbow. It is like an exquisite miniature painted on ivory. It lasts for only a fleeting instant, while the airplane is exactly in the right position between sun and cloud. Even the pilot who scorns all superstitions cannot avoid a feeling of delight at the simple beauty of the spectacle of his ship shadowed delicately on the shimmering cloud

fabric and haloed by a rainbow. Only once in all my flying have I seen this phenomenon, and that was on the first stage of our flight from Berlin to Moscow.

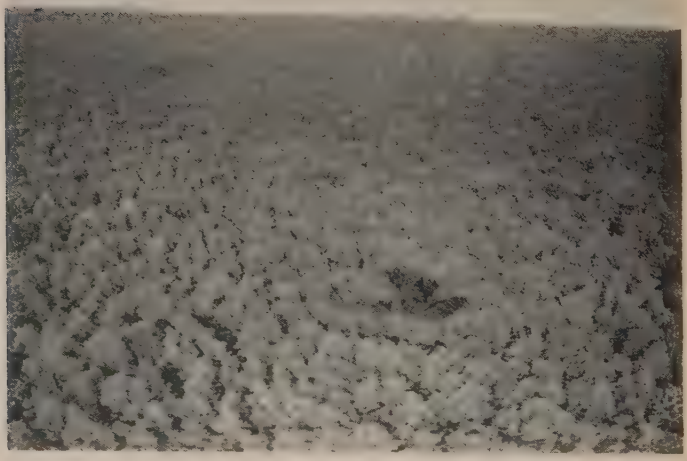
One famous air fighter wore five charms around his neck, the 'squared 13' engraved on a gold plate, a locket, a bit of lace (probably from a handkerchief), a small drawing on a bit of oiled silk, and a final talisman that was a mystery — some hard object sewed in a small sack. He was shot down in Germany and spent many months in a German prison camp. He was shot down again during the fight against the Red Army in Poland. This time he was captured by a squad of Bolshevik Cossacks, and had to ride beside one of them, 'stirrup-strap,' for days. In Moscow he passed ten months in prison, and then finally escaped. He had to walk all the way from Moscow to Riga. No one can doubt the sorcery of his assemblage of charms, he says. The fact that he is still alive is sufficient proof of their powers!

But the favorite amulet among American air fighters during the World War was a girl's garter or stocking around the neck — a twentieth-century substitute for the nineteenth-century rabbit's foot.

The superstition of sailors is a legend. The aviator is the sailor of the sky, and it is not astonishing that he has his superstitions. How-

WE FLY LOW OVER STOCKHOLM

OUR MOST COMFORTABLE AIR VOYAGE WAS IN THIS BIG DORNIER-WAL FLYING-BOAT FROM SWEDEN ACROSS THE BALTIC



A RARE SIGHT AND A HAPPY OMEN IS THE SHADOW OF YOUR PLANE RACING WITH YOU FAR BELOW

ever, his is a new art, and his ideas of the things that bring good luck and bad luck are not yet standardized into a tradition. Only a few superstitions are common to the run of flying men. Each is likely to have his own particular fetishes — but nearly all favor miladi's garter.

The huge single wing of the Dornier-Wal is above us. Then on top of that are the motors and the propellers. Our cabin is in the hull of the boat. Instead of hull you might call it one huge pontoon. The cockpits occupied by the crew — two pilots, a mechanic and a radio man — are on top of the hull, above the cabin and just below the wing. On each side of the cabin are four large windows which give us an uninterrupted view of the world below. On the walls in front and behind us are framed photographic scenes taken from the air, after the fashion of railway compartments on European trains.

Twelve-forty. We are still skimming along the coast and far below are hundreds of islands of every size. We have descended to an altitude of less than a thousand feet now, because our cloud ceiling is low. The sea is fairly calm, so it would be a simple matter to park almost anywhere. Of course our journey would not be so pleasant if the Baltic were on a rampage.

From our lookout in the skies we can see scores of submerged rocks, just below the surface of the sea. Occasionally we sight a sail, and some-

how it makes the trip seem a bit jollier to know that there are human beings within hailing distance. Here and there we flash by a lighthouse perched on a lofty rock. The air is so smooth that we hardly realize we are actually in motion. I should think night flying on this route from the capital of Sweden to Berlin might become popular one of these days. The huge flying-boats are so spacious and comfortable that it would be easy to arrange bunks for passengers. Powerful beacon lights could be placed along the coast to prevent planes from sliding down into an island in case of a forced landing. Searchlights on the front of the planes would also help.

One o'clock. The sun is trying desperately to break through the clouds now, but our ceiling has gradually grown lower and lower until we are barely three hundred feet off the water. Under us are myriads of rocky isles. There must be ten thousand of them along this coast.

Another ten minutes have flashed by and now we are cruising in bright sunlight just a few feet off the water. We are winging our way along like a gull. When you are so close to the surface of the sea, you have the feeling that you are flying many times faster than when you are up a thousand feet or more. In fact the sea whirls by so swiftly on both sides that for a few minutes it makes us giddy. We are going at the rate of about one hundred and ten miles an hour, and we

wonder what would happen if the pilot should doze off and whip a wing tip into the waves. Later on we discover why the pilots like to fly so low. They say it is no more dangerous and that the air is less dense just a few feet off the surface of the sea, with the result that they are able to make the same speed with a consumption of two thirds of the gasoline required at higher altitudes. These Dornier-Wal flying-boats are manned alternately by both Swedish and German crews. The two countries operate the air line jointly and their planes fly back and forth over this route every day.

One-thirty. We are still skimming along within twenty or thirty feet of the water. If a pilot flew for many miles at such an altitude in a landplane, he would be looked upon as quite mad. A few of these little islands on either side of us are inhabited. I suppose the people make their living fishing. What a life to have your bungalow pitched on a boulder in the Baltic! Captain Florman, over a glass of schnaaps in the Opéra Café in Stockholm, told me of some friends of his who went on deep-sea fishing expeditions in a plane. They would swoop down, let their pontoons rest on the waves, and fish from the cockpit. If they failed to get a bite they would 'switch on,' take to the air again, rebait their hooks while cruising above the clouds, and then glide down to some other place thirty or forty

miles distant and try their luck again. He was not enough of a Baron Münchausen, however, to bring this novel yarn to a climax by telling us how his friends caught flying fish from their plane! We appreciated that.

This section of Sweden, which has been in sight ever since leaving Stockholm, is called Sudermann Land. Somewhere in the heart of it is one of the country seats of the King's second son, Prince Wilhelm, the explorer, who is also the Duke of Sudermann. The Prince is a real democrat, earns his own living writing books, and drives a Ford. He is six feet four inches in height, so tall that he can't wear a hat in his flivver, and has to double up like a human jackknife even to get into it.

There are no trees on these islands now. They are merely huge masses of rock jutting above the waves. Off to the right is the pine-clad mainland, seemingly one vast unbroken forest, and those church spires and factory chimneys are in the old Swedish town of Västervik. The rocky islands are becoming even more numerous, and we keep zooming up to fifty or a hundred feet to dodge the tops of them.

Europeans can always spot an American, no matter whether he is wearing clothes made on the Continent or not. A Swedish gentleman sitting just behind me apparently has spent at least a year or two of his life in Minnesota because he

has just said to me in typical Minneapolis English: 'This bane sceneries you von't see anyvere's else in the vorld, vasn't it?'

Here and there on big rocks we see tall stone columns. It occurred to me that they might mark places where ships had been wrecked, but the gentleman behind me says 'no.' I never do find out what they mean. Many miles to our left there is an island that looks big enough to be mainland. Obviously it is Gotland, the largest island belonging to Sweden and one of the largest in the Baltic. In a direct line, on farther to the east across the sea, are the new republics of Esthonia, Latvia, and Lithuania.

Gotland is said to be the most beautiful of all the islands in the Baltic. Our pilot is swinging off the course a few miles so that we can look down on the ancient town of Visby, the city of ruins and roses. It is about the nearest thing you will find up here in northern Europe to the picturesque ruins of the ancient civilizations along the Mediterranean.

Its tale is that of a city fallen asleep for centuries and then awakened. It must have been an important commercial center at a very early date, because coins found in its ruins date back to the beginning of the Christian era. But it was in the Middle Ages that Visby reached its apex of glory. It was a tremendously wealthy mercantile place, a member of the Hanseatic League. Its

streets were lined with splendid buildings. It was a religious center too. Its burghers outdid themselves in building monasteries and splendid churches, seventeen of the latter. With the Reformation monastic buildings and churches fell into disuse and neglect. Then Visby's commercial importance fell. The former magnificent island metropolis became an almost forgotten village. Thus it remained until recent years, when the spell of its ruined grandeur began to lure travelers from distant lands.

To-day, of the seventeen beautiful churches of medieval Visby, eleven remain as ruins. We get a distant glimpse of the graceful Gothic columns as we fly by.

A hundred yards to our left, perched on a big smooth rock, is a lone man, a Swedish Robinson Crusoe, with a long pole in his hand. Judging from the way he is holding it he must be waiting to spear a fish, although that is unlikely, for there are no Eskimos in these parts. The water is as smooth as glass and we pass more fishing smacks bowling along under full sail.

At ten minutes to two we arrive off the tip of a long thin slice of land, the island of Oland. In a few minutes now we ought to be in Kalmar, the halfway station on our flight to Germany.

CHAPTER XXVI

THE MARINER WHO PUT TO SEA ON A SHIPLOAD OF T.N.T.

INSTEAD of occasional ships we are now within sight of scores of them, all under full sail. On the crest of the ridge which runs down the center of this island are several windmills with their huge arms silhouetted against the sky. The old castle over there is a ruin on the outskirts of the town of Borgholm. Up ahead is a graceful airplane circling, and under it the spires of a large town. We seem to be nearing civilization again, and as we pass over one tiny village after another the inhabitants rush from their homes to wave to us. We are flying so low that we can even see the expressions on their faces. The expressions are distinctly Swedish.

Two-twenty. After circling over the city — for advertising purposes I suppose, in order to encourage the people here to use this new means of transportation — we swoop down over the turrets and walls of lovely old Kalmar Castle and taxi across the water to the pier and right alongside another plane, a sister ship of ours. It is the northbound craft which has just come in on its way from Stettin to Stockholm. Our pilot runs the nose of our Dornier-Wal up out of the water

onto a wooden incline, from which it is easy for us to descend. The flying season has just opened and half of Kalmar seems to be out at the airport. A taxi rushes up, we pile in, and a few minutes later we are in front of a groaning sideboard in an excellent hotel, picking out our *Smörgasbord.* For eighty cents we have a superb luncheon that would cost three or four times as much in America. On the sideboard are some thirty-odd varieties of delicious *hors d'œuvre,* including deviled eggs, beets, salads, fish that are smoked and fish in oil, Swedish bread, a mountain of butter, cheeses plain and exotic, cold meats, and mysterious Swedish dishes that are new to us. For an extra fifteen cents you can have a bottle of Pilsner if your fancy tempts you that way. But this is not all. After the *Smörgasbord* (which means buttergoose-table) comes the hot meal. No wonder the Norsemen are a hardy race!

Normally a few hours of flying rather tires you out. In a landplane, crossing over almost any country in Europe you usually encounter enough air bumps to shake you up a bit. Nothing serious, mind you, and every bit as comfortable as riding in the best *wagon-lit* compartment. Our jump from Stockholm to Kalmar has taken us about two hours and a half, and instead of feeling the least bit tired we actually are more rested than when we started. We haven't encountered a single air bump on the whole flight.

The enormous size and weight of our flying-boat may have had something to do with our comfort, but the fact that we were flying over water was largely responsible for the smoothness of the trip. It was quite unlike our rather thrilling flight across the Black Sea in a landplane, a much smaller machine. This time we felt far less anxiety. There is an undeniable sense of security in soaring over the sea in a winged machine that is also a boat, and in knowing that there is a good landing-field below you nearly all of the time. Of all the airways of Europe we found the one across the Baltic the most comfortable.

While we had luncheon in Kalmar, we fell to discussing the rival merits of seaplanes and landplanes. The latter are used almost entirely over the airways of the world, but many authorities, like the Marquis de Pinedo, the man who flits about the globe from continent to continent, believe that planes of the float or boat type will soon become the more popular. Even when you are flying across the heart of Europe or Asia or America, you are amazed to look down and see how much water there is beneath you. In fact you are seldom out of sight of it, and are usually in easy gliding distance of a lake or river.

Of course there is a reason why planes with wheels far outnumber the boat type. Aviation got its great spurt during the World War. At

that time man's ingenuity and skill were strained to the limit in order to develop fighting aircraft that could be used over the lines along the Western Front. Speed and ability to maneuver were vital features, and landplanes are faster and more agile. And then the fighting was on land and above it. The planes designed were nearly all with wheels. Of course some seaplanes were used for coast-defense work and for chasing U-boats, but from 1914 until the present moment nearly all designers have concentrated on the land type.

Obviously another important advantage that the flying-boat has is that it does not require an expensive aerodrome. The cost of maintaining large acreage so that it will never be boggy is quite a large item. The seaplane generally is not cramped for room either in taking off or landing. This is an advantage, because it can therefore run along for a half-mile or more, if necessary, in working up flying speed. It can therefore take off with a vast load. An aeroplane with a similar burden could get off the ground only from the largest aerodromes in the world.

After a truly Gargantuan Swedish luncheon we taxi back to the *flughaven*, watch the attendants pump the last few gallons of petrol into the stomach of our all-metal seagull, and then once more we clamber up on the hull, drop down through the hatchway, and sink into our

luxurious chairs. The wireless operator slides the metal trapdoor over the hatch, the propellers whirl, we taxi a few feet away from the pier, and then off we go, bumping from wave to wave as we gather flying speed for our last leap across the main part of the Baltic which separates Scandinavia from Germany.

We coast off the edge of the bay at Kalmar and slide into the upper air at three-twenty. At four o'clock a fellow passenger, who travels back and forth over this route quite frequently, volunteers the information that the rest of our jaunt to Germany will take us somewhere between two hours and a quarter and three hours and a half, depending on whether we have a tail wind or a head wind. The sun is shining gloriously. The world of water and land under us looks as lovely and soft as a Turner painting. Every few moments we sight a poetic sailing ship or a doddering, grimy freighter up ahead, then in a flash it is far behind us.

The Dornier-Wals used on this route were designed by a German aeronautical engineer and the plant where they are manufactured is in Italy. They are exact sister ships to the two used by Roald Amundsen on his unsuccessful attempt to fly from Spitzbergen to the North Pole in 1925. Signor Locatelli, the Italian airman and politician, also used one of them on his unhappy attempt to fly across the North Atlantic

in company with the American Army Round the World Fliers, back in 1924. Locatelli and three companions started out from Italy and caught up with the American airmen, Smith and Arnold and Nelson and Harding, at Rekjavik, Iceland. Lieutenants Wade and Ogden had just lost their Douglas cruiser on the previous lap when it sank in the North Atlantic between the Faroë Islands and Iceland. The next jump was to be from Rekjavik across Denmark Straits and over the ice fields to Greenland. Locatelli, in his Dornier-Wal, and the two remaining Douglas cruisers set out together, but Locatelli came down in the fog, damaged his plane, and for three days and four nights the Italians bobbed up and down on the surface of the North Atlantic. It was only by a streak of sheer good fortune that they were finally rescued by the United States naval cruiser Richmond. They were found in the middle of the night when the searchlight from the Richmond picked them up. The Italians were so exhausted and so seasick that they had to be lifted from their cockpits to the deck of the cruiser in a net.

Four-thirty. We are in the middle of the Baltic now and far off to our right is the large Danish island of Bornholm. Only a few years ago, when the World War was still in full swing, the waters beneath us swarmed with German U-boats. Whenever I fly over a stretch of water

like this I cannot help but recall some of the vivid stories of those days, and of the innumerable heroic deeds which went unsung. For instance, there was the old sea dog who sat at the captain's table with us on the steamer coming across the Atlantic recently. He had just lost his ship and was returning home to Liverpool as a passenger. The first few days out he spoke hardly a half-dozen words, but one night in the captain's cabin he told us the tale of his war-time experiences. His name was Captain J. H. Rose, and what he went through was typical of what happened to many an Allied seaman. Although his adventures had nothing to do with airplanes, the story is worth chronicling.

Prior to August, 1914, he had been in command of one of the Ellerman Line passenger ships plying between the British Isles and India. When war came, his ship was immediately commandeered by the British Admiralty, and from then on until he lost her she served as a ferry-boat for carrying troops across the Channel to France. After a few trips a U-boat sent a torpedo into her, amidships, below the water-line, and Captain Rose with a few survivors clung to floating timbers until picked up.

Some months later he was given command of a ship carrying munitions across the North Sea from Hull. He always had such a big cargo of high explosives on board that the Admiralty

couldn't give him the protection of a convoy, because, with a destroyer on either side, at a distance of a half-mile or so, if a submarine had slipped in and torpedoed him, the explosion would have been so terrific that it not only would have blown his ship to smithereens, but the destroyers would have gone up also.

One day a U-boat did waylay him in the North Sea. As he rushed into the chartroom to get his log and manifest sheets and throw them overboard, the submarine fired on him. The shell tore through the chartroom and burst right above his head. As a result, for two months he was both blind and deaf.

The following year the Admiralty gave him another ship and this time sent him on the most hazardous mission of all. At New York he took on a cargo of T.N.T., high-explosive shells, and machine-gun ammunition. It was not until the morning he sailed that he knew what port he was bound for. The British Consul-General gave him sealed orders just as the gangplank was pulled in. He was to reach Archangel, the Russian port on the Arctic Ocean, if possible, and deliver the ammunition to the Czar's army. Five ships set out on this journey in midwinter. They were to head north to Greenland, and then try to enter the Arctic Ocean through the Straits of Denmark between Greenland and Iceland, which at that season of the year are almost always

entirely blocked by the Arctic ice pack. They found a narrow lane through the ice, but only two out of the five ships got through. The other three bumped the ice, the jar set off the ammunition, and they vanished with all on board. Even the dining-saloon of Captain Rose's ship was stacked half full of boxes of T.N.T., but luck was with him and he got to Archangel.

After the War he became a skipper of a freighter and his ship nearly went down in that same gale which caught the Antinoe, the crew of which was rescued so dramatically by the American passenger liner Roosevelt. He was off Cape May. The storm so battered his freighter that her engines broke down under the strain. For eight days she lay wallowing in the trough of the sea with huge combers breaking over her and with her crew expecting every minute that she would capsize. Captain Rose had no wireless with which to call for help as the Antinoe had done. Through those frightful eight days and nights he went without sleep and stayed on the bridge or in the wheelhouse, exerting every trick of navigation to keep the craft afloat. At times she rolled sixty degrees from the vertical, and how she came through he hardly knew. When the storm finally abated, another vessel towed her to port. And then Captain Rose came down with pneumonia in New York.

As with hundreds of other heroes of the British

Merchant Marine, his splendid work and heroism during the War went unrewarded. If any man ever earned a V.C., surely it was he, but not even a bronze medal or a citation did he receive. During war days there was a curious women's organization in England called 'The White Feather Society.' In order to stimulate recruiting and make men ashamed of themselves, these women would stick a white feather in the lapel of any unlucky man whom they encountered in civilian clothes. One of them did this very thing to Captain Rose on the street in Liverpool, shortly after he had lost his second ship in the encounter with the U-boat in the North Sea! His was a job of the sort that few of us knew about, the kind that went unrewarded, for he was 'only an officer in the merchant marine.'

Four-forty-five. Now we are passing within one hundred yards of the shore of Bornholm, and down here on the edge of the island is the little town of Nexo with its picturesque windmills and red-brick lighthouse. On beyond is a lovely village of white cottages and red-tiled roofs. There must be a great deal of limestone on this island because each town has its group of kilns with smoke pouring from them. Within ten minutes we have sped on south, with land no longer in sight. From an altitude of five hundred feet we have once more dropped down to within a few yards of the sea.

Five-twenty-five. Land ho! There is Germany right up ahead of us. Ten minutes have passed and here we are, directly above the beach. The mouth of a canal is under us on the right, and off to the left a wrecked ship lies high and dry on her side. We cross a narrow strip of land and then look down on a wide body of water. We whisk past a small town with its red church and fly over flat land that must be the delta of a river. The farms look a little bit like the cultivated fields along the lower Mississippi, the 'black bottom' country. Like Holland, this also is a land of windmills. At five-forty-five we look down on the large town of Wollin and then pass over another big landlocked body of water, with many charming fishing boats here and there and occasionally a row of fish traps. This region is the delta of the great Oder River. The fields are so flat along here that I suppose even a flying-boat could settle down on them and skim along to a stop, without doing any damage. Just the same, I hope our pilots are not obliged to try anything of the sort. Up ahead on the right is a great city and beneath us is a vast lumber yard and the tall stacks of a number of factories. Without flying over the city, which must be Stettin, we bank to the left and glide down toward a body of water. This is the *flughaven* at the German end of the route.

Now we slide easily onto the surface of the

placid lake. Sharp at six-ten we pull up alongside a little makeshift pier. Our bags are piled on the grass where an officious German Government inspector marks them and notes down the details of our passports. In less than ten minutes we are speeding in a big car toward the Stettin Bahnhof. There we catch the fast express coming through from Poland and East Prussia which whirls us over the rails to Berlin.

In approximately five hours and twenty minutes, actual flying time, we have covered some five hundred miles and made the longest water hop that you will find in traveling over the commercial airways of Europe. Steamers take at least a day and a night to make this same journey. So it is not surprising that the air route has become exceedingly popular with people who travel back and forth between Berlin and Stockholm.

CHAPTER XXVII

AËRIAL KNIGHTS OF THE MALTESE CROSS

We have seen enough of Germany for the present, and are in a mood for more adventure. Civilized countries begin to get on one's nerves after a while, and we have knocked around in the outlands enough to like them best. So we always end by getting tired of hotel flunkies, electric refrigerators, automats, limousines, and the movies, and experience a craving for the kampongs of Malaya, the barren wastes of Waziristan, or even the tundra plains of the Far North.

'Well, where shall we go?' asked my wife.

A study of the library of air-route folders we had collected revealed that there was a regular and apparently quite comfortable sky service between Paris and Morocco. Morocco, it is true, is no upper Amazon or inner New Guinea, but still Africa is Africa. We decided on Morocco. So to Paris to take an Africa-bound plane.

On the morning when we left Berlin I staged a good example of how not to start the fleeting flying-day. I hadn't slept well that night, so I lingered twenty minutes too long beneath the balloon-like eiderdown. My wife did her best to get me out, but the task was hopeless. Then packing, breakfast, and some urgent last-minute

telephone calls, and we were one minute late and missed the bus to the flying-field. Thereupon I found I had left my watch in the hotel room. A taxi-cab dash to the aerodrome, and we got there with ten minutes to spare. At that moment I remembered some more telephone calls, and made them at the *flugplatz* station. The net result of it all was three people making a wild sprint to the plane, my wife, a page carrying our bags, and I. We just caught it.

That was the nearest we came to missing a plane in the course of our many aërial jaunts, a better record than I have made at railroad traveling. There is one all-important difference between railroads and aeroplanes. Your train pulls out, and still you can dash down the station platform, jump for the last coach, and swing aboard. You can't do that with a flying-machine. If you sprinted after one and caught on to the tail, you would be out of luck.

Nine-fifteen. For fifteen minutes we cruise through sunny skies over Berlin and across an expanse of water that forms a mammoth letter J, west and southwest of the city. Undoubtedly it is a very fine sight, but that bad start leaves me unappreciative. Man is a temperamental animal, especially in flying. You need a calm and peaceful mood to enjoy aërial travel. You should be relaxed and at peace with the world. Furthermore, don't bolt your lunch on the day you are

going to fly, or you may lose it quicker than you got it. I feel a bit squeamish — that's all.

This is a three-engined Junkers with accommodations for nine passengers. There are two others on board besides ourselves, a couple of American business men with their ubiquitous horn-rimmed glasses. They are the first 'Yanks' we have met in the air. It didn't take us long to size each other up as Americans, and of course there was the usual confab, as much as was possible against the noise of the motors.

'It's our first flight,' one of them said. 'Have you ever flown before?'

The tone was a trifle patronizing and important, and my wife spoke up sweetly, saying that we had been flying around for several months and had covered some twenty thousand miles.

That left them speechless. If it hadn't been for their horn-rimmed glasses you could have knocked their eyeballs off with a fly-swatter.

Our first stop will be Hanover, and there is not much to see from the sky on the way from Berlin to that city. The river Elbe, a large forest, a fine château, a great plain, a small river which must be the Ober, a few factories — that is all I noticed.

We waited for a few minutes at Hanover before taking off for the jump to Cologne. When our two American friends got out of the machine, I noticed that they fortified themselves each with a

couple of nips of schnaaps. That is quite a common ceremony after one's first flight.

Eleven. From Hanover we head southwest over country that becomes more interesting scenically. Our pilot does not steer quite in a straight line. Our course makes a bend somewhat to the south, and thus avoids some of the gloomy depths of the Westphalian manufacturing and coal-mining section. There are hills and fine towns, and as we approach the country of the Rhine, the land seems to take on a romantic air. Maybe it's in our imagination.

Our two American friends are still with us. They are making the trip all the way to Paris. One of them is getting quite enthusiastic about flying. He tells me something about an idea with which he has been inspired. He is from some town out in Ohio, possibly Chillicothe, and he thinks it would be a great idea to establish an air line from there to Columbus. Maybe it's the intoxication of flying on wings, and then maybe it's the Cognac.

Twelve-fifteen. Across the plain two slender pointed fingers thrust themselves above the surrounding country. They are the famous spires of the Cathedral of Cologne. These twin heaven-pointing towers are in many respects the greatest architectural marvels of Europe. I don't know why it is, but they seem to dominate the scene whenever they are in the range of vision. And

ALTHOUGH YOU TRAVEL MANY A MILE IN ANY DIRECTION, YOU STILL SEE THE FAMOUS TWIN SPIRES OF THE CATHEDRAL OF COLOGNE

IN A GIANT ALL-METAL, THREE-ENGINED PULLMAN LINER OF THE AIR MY WIFE AND I WING OUR WAY FROM BERLIN TO PARIS TO CATCH A PLANE FOR AFRICA

they seem always to be in sight. You can travel miles in any direction and still you can't lose them. The Cologne Cathedral is the most striking single building I have ever seen from the air. In some ways it is more imposing than Saint Paul's in London, Sacré Cœur on Montmartre, the Kremlin in Moscow, or even Santa Sofia in Constantinople. The bridges of Cologne span the Rhine in their traditional stateliness down there. The river is a dingy gray and brings to mind Coleridge's lyrical apostrophe:

> 'The River Rhine, it is well known,
> Doth wash your city of Cologne;
> But tell me, nymphs, what power divine
> Shall henceforth wash the River Rhine?'

It was cloudy when we landed at Cologne and a storm seemed to be brewing. Nevertheless we took off promptly for Paris. At twelve-thirty we were heading southwest with storm-clouds scudding. Down there is Aix-la-Chapelle, the ancient capital of Charlemagne's empire. I wonder whether the ghost of the great Frankish King, who died at Aix, is roaming down there somewhere, keeping a weather eye on the blanket of dusky gray overhead. Yes, we're in for a bit of rough sledding. Hello, there! A plane appears ahead, and passes us a mile away. I suppose it is one of the machines on this run. There it goes, disappearing nimbly in the nimbus.

One-thirty. We are in a deuce of a blow, drift-

ing far south of our course. The wind is from the northwest. The big Junkers is bucking manfully — and still drifting south. In the cabin we are being pitched around. The bumps are quite tremendous and the swinging and lurching something to sing about. Our two fellow Americans are silent and sad-faced now. I'll bet their enthusiasm for flying is evaporating slightly. I wonder whether the fat one is still thinking of the skyway from his home town to Columbus? We have a fifth passenger, a smirking, swaying, quite effeminate chap. He seems to be bothered about his make-up. Maybe flying in a storm disturbs 'that school-girl complexion.' At any rate, he gets out a vanity case every so often, and looks in a mirror and uses puff and lip-stick.

It is raining torrents and blowing like the dickens, and we have to fly below a low cloud ceiling. We are off our course so far that we are now somewhere over Luxemburg. I remember great times in that historic duchy. I drove across it when the American army was marching through to Coblenz after the Armistice. Were the doughboys hitting on all four? They were. We are blown as far south as Metz. The pilot is circling over the flying-field, as if undecided what to do. As a matter of fact, he is doubtful about going on to Paris in the storm and is wondering whether he should land. No, now he straightens out on a westerly course. He's going to try to make it.

The weather grows a bit lighter, although it is still wet and very gusty.

Who wouldn't give more than a passing glance to the city below and its environs? The ground is in a haze and we can't see much, but that's Verdun. The hardest and bitterest and bloodiest struggle in the whole World War? I should say it was Verdun. For long heart-breaking weeks, on the misty fields down there, the Germans pushed and the French held, each side enduring the fires of hell with unbelievable heroism. But if those hills around the city down there are heroic land, this sky up here is not less hallowed in the story of human bravery. There was a great wild battle for the sky above the fighting lines on the earth. All through the War, in fact, the planes were at it above Verdun, until this stretch of atmosphere up here became one of the most famous of sky battle-fields. Ghosts of brave men who killed and were killed may be stalking among the clouds around us. Perhaps the shade of the great von Richthofen may have its haunts out there.

During the last part of 1916 and early part of 1917 the fighting fronts in France rang with the fame of the Flying Circus. This group, which numbered as many as twenty planes flying in disciplined maneuvers, established itself as the most celebrated aërial formation of the War. It was led by Baron Manfred von Richthofen, the Red

Devil, credited with more planes brought down than any other German, eighty victories in all. In his red machine and at the head of his command of red machines, he was the terror of the sky.

Richthofen, to be sure, did not originate the flying circus. It began with that other great German sky fighter, Boelke, who was a pioneer in the development of aërial battle tactics. Boelke brought together the famous *Jagdstaffel*, which was a logical continuation of the idea of group flying. The war birds had already come to understand that the lone pilot was 'cold meat' for several planes working together. The circus was notable in that it was larger and better trained than most formations. But Boelke was killed soon after he had formed it, and von Richthofen, his star pupil, succeeded him.

He was the last word in relentless daring. During the early days of his flying career the German aviators were experimenting with camouflage. They sought for colors and patterns that would make their machines less visible in the sky, so that they might the better steal upon their foes unawares. They decided in the end that no kind of disguise was any good; that the lines of a plane would remain clear against the sky and that was all there was to it. Richthofen, after a few tries with camouflage, dropped the idea in disgust, and went to the other extreme. He painted his plane a vivid red, the most glaring of

FROM CASTLE TO CASTLE WE FOLLOW THE WINDING COURSE OF THE ROMANTIC RHINE

THE GHOST-LIKE DOMES OF SACRÉ CŒUR ARE THE LAST BIT OF PARIS THAT WE SEE

colors. His comrades followed his example, though at Richthofen's command each adorned his machine with a splash of some other color somewhere, so that the Red Devil's machine might still remain recognizable. In the end the resort to red probably availed better than any camouflage. The flame-colored planes established a reputation for themselves and excited a vast amount of respect, which helped rather than hindered them in their battle maneuvers.

When Richthofen took command after Boelke's death, an opportunity for him to display his prowess as a leader soon offered itself. A great air battle took place with eighty planes in it. It was on November 9, 1916. Sixteen heavy English bombing planes with an escort of fourteen fighters sailed out to bomb Vraucourt, where the headquarters of the Grand Duke of Saxe-Coburg-Gotha were located. They flew in V-shaped formations, the bombers below and the combat planes above them. Several German formations caught sight of the raiding party and turned to the attack. Foremost among them was Richthofen's flight of red fighting birds. Six of them were out together that day. As the rival air fleets joined battle, other machines hurried up, until each side was about forty strong.

The six red machines of the circus attacked from the front and above. They came diving swiftly at the fleet of heavier bombers. The

British combat planes were high above to prevent just that. They plunged down to come to grips with the German fighters before these could knock out the bombers. And now there was a wild skirmish in the air, with the battle wasps swirling around above the bombers and the larger machines spouting machine-gun lead at any enemy that swooped down within range. These larger machines continued their way doggedly toward Vraucourt to drop their eggs. This they must do, air battle or no air battle. And so the cloud of battle swirled eastward. Two red planes are seen flashing through the net of British combat planes and down upon the bombers. In one is Richthofen. In the other is little Immelmann, brother of the famous Immelmann who was killed some time before. They single out and attack two of the big machines. Streams of bullets squirt at them, and, diving, they too spray their deadly streams. Immelmann's victim goes down in flames. Richthofen's antagonist puts up a hard battle. The tracer bullets go smoking through the air. The red plane is hit. The machine gunner in the British machine is hit and sags limply. The pilot is wounded. Bullets crash into the motor. It stops. The wounded pilot finds his big machine and its cargo of bombs dropping. He controls his munitions ship as well as he can as she glides down. Landing with that load of high explosive dangling below is some-

thing to think about. He cannot get rid of the bombs. The lever for releasing them is in the cockpit of the mortally wounded observer. Down he goes. The Red Devil sees that his adversary is helpless, and accompanies him earthward to welcome him when he lands — if the bombs leave anything to welcome. The English pilot lands safely — a masterpiece of skill. The fight has been far behind the German lines, and he is a prisoner.

Meanwhile, with the battle continuing, the bombers have kept on determinedly. They reach Vraucourt and drop their eggs. Then the raiding air fleet, still fighting with its enemies, returns home. The losses in the battle have been three German machines shot down and four British.

On the ground Richthofen has his prisoner. A group of high officers come up. One is the Grand Duke Saxe-Coburg-Gotha. He greets the greasy, begrimed aviator, and a few days later sends him a decoration.

When Richthofen met his fate it was seemingly by the agency of a chance bullet. No enemy airman ever laid claim to being the victor that ended his career. It was in a wild fight of swirling planes. Machine-gun bullets streaked the air in every direction. It may have been a German pellet, one from a comrade's gun, that sent Germany's Ace of Aces plunging to earth. At any rate, it seems to have been an accidental shot.

The gods of irony must have laughed at such a destiny for a man who had had as many close shaves as Richthofen. Once an observer in a two-seater sent a flaming bullet into his gas tank. Down the red plane went with a slight streak of smoke trailing after it. Richthofen knew what that meant. Many a time he had seen a victim go down with that comet-like streamer and then burst into flames. He had to look only a few moments ahead to see himself cremated alive in the flaming coffin. Still, by some miracle, his machine did not take fire. He cracked up when he landed, but he was not hurt badly, and had come down within his own lines.

But now the mind is taken from the war in the air to the terrestrial strife of trenches and high explosive. Down there in Montfaucon and the Argonne Forest, the Americans hit the Germans right in the solar plexus. They cracked straight into the side of the great salient made by the German lines which stretched to the north and east. If the German line broke there, the whole salient might be rolled up. No wonder the region of the Argonne and Montfaucon was the last word in elaborate fortification. The French and the Americans hit the line in a carefully prepared surprise attack. Both went through. The Americans encountered almost insurmountable difficulties in the bloody maze of war in the woods. So thoroughly did the untried doughboys prove

their metal that had it not been for a breakdown of the American transport and a heavy rain which came to help the Germans, a major disaster might have befallen the enemy right there. As it was, the French and Americans rushed the German line with such success and went through so far that the safety of the entire German army was seriously threatened. That was one of the explanations of the rapid German retreat along the lines farther north.

Meanwhile the British were driving ahead along their line and their aviators were doing their deeds. The British aviators never did get much publicity. The policy of the Royal Flying Corps was secrecy. Of all the British aces only Captain Ball really caught the popular imagination. There was Mannock, for instance, who when he was killed had established himself as one of the greatest champions of the air, second only to René Fonck.

He had been a mysterious figure in my mind. People connected with aviation spoke of him almost in tones of awe, but few knew anything more than vague rumors about him, and the general public was not even acquainted with his name. I had a friend, Lieutenant George W. Thomson, an American who had served in the Royal Flying Corps, had been forced to land behind the German lines, and had passed the last months of the War as a prisoner in Germany.

I knew he had served in Mannock's squadron. So I went to him, and asked him about Mannock.

'Edward Mannock was commander of A flight, 74th Squadron, R.A.F. I joined his flight in the spring of 1918, and had many an opportunity to see him in action. He was a great pilot and a perfect shot; not a stunt flier and for that reason little known. When the final records were cast up after the War, it was found that he had seventy-four enemy machines to his account. That many were official and we knew that a great many more were unofficial. He probably was the premier ace of the R.A.F., and I should say he had as many victories as von Richthofen.

'He used no signals (Véry lights), but communicated with the planes of his flight by wing-tip waggling and pointing. His men never wore helmets or goggles, because they impeded vision. He believed in height, and usually led us to twenty-two thousand feet before we went into "Germany."

'He was full of fun. On one occasion he took a pair of boots and dropped them on a German aerodrome with a note saying: "If you won't come up and fight, maybe you can use these on the ground."

'He was the oldest man in the squadron, thirty-three. He had the M.C. and the D.S.O. If any one ever deserved the V.C., he did, but he

was so modest in his fighting and his claims that little was heard of him.

'He was shot down by machine-gun fire from the ground. I think this was the result of a "stunt." He went out with a young chap to help him get his first German plane, and in an encounter held his fire so that the youngster could get his own gun going. While doing this he was hit by a stray bullet from below. I can't guarantee the truth of this story, but think it is true.

'Mannock was a fine gentleman and as charming a fellow as you could want to find. He was a splendid bridge player and an accomplished violinist. One of the delights of our outfit was to hear him play "Where my caravan has rested."'

The sky is clearing rapidly now, and the pilot is trying to make up for some of the time we have lost in the storm. Throttle wide open we are streaking straight for Paris, where we are overdue. A shadowy form sprawling on the ground in the distance ahead. It is Paris. And here we are gliding toward Le Bourget.

CHAPTER XXVIII

AFRICA-BOUND

My wife was very decided about it. We were on a flying tour of Europe, quite true, and naturally we had to devote a lot of time to flying. There was, however, one thing that we had neglected: shopping. Here we already had been in Europe for nearly seven months and she had not bought a single new frock or hat. It was all right to fly from Paris to Morocco, as we had planned, but now that we were back in Paris she was not going to hop right out again on the next plane. In fact she was going to stay in Paris at her own sweet leisure.

'You fly to Morocco,' she said, 'while I flit about Paris.'

And so it was that I started out alone on an aërial voyage the itinerary of which was to be: Paris, Lyons, Marseilles, Perpignan, Barcelona, Alicante, Malaga, Gibraltar, Tangier, Rabat, Casablanca, Fez, and return. That was the way the tour was intended, but it turned out somewhat differently. Because of her shopping in Paris my wife missed two forced landings, the second of which was a crash.

At Le Bourget I climbed into a Blériot-Spad. It seemed like a toy in comparison with the big

ships of the air in which we had flown for so many thousands of miles lately. But it was the same sort of Spad that we had used on the long flight to Constantinople and it seemed like getting back home. At twelve-twenty we shot out across Le Bourget aerodrome and bolted into the air just ahead of the London plane. It was going north into fog. We were headed south toward the Sahara. Le Bourget lies to the northeast of Paris, and as we swept along we passed over many historic spots, such as the forest of Fontainebleau. Like Le Bourget, many places in France are intimately associated with the history of aviation. Nor am I thinking of war days. I have in mind more particularly places like Bagatelle and Le Mans. Bagatelle is an inconspicuous place, a mere bagatelle, indeed, so far as geography is concerned. But there in October of 1906 occurred an event that may be regarded as the birth of mechanical flight in Europe. The hero of the occasion was that extraordinary character, Santos-Dumont. He was a Brazilian millionaire whose activity of body and mind led him from one novel enterprise to another. Having turned his prodigiously enthusiastic talents to the art of flying, then one of the most fantastic of follies, he experimented first with gliders, next with dirigible balloons, with which he achieved world-wide fame, afterward with a combination of balloon and plane, and finally with the aeroplane.

This latter brought him to his great achievement. Then, having made history, he quickly dropped the art in which he was so great a pioneer and turned his eager, impatient attention to a kind of mechanical aquatic bird, whereupon he passed out of public notice.

His aeroplane exploit took place at Bagatelle. The Archdeacon Prize was open for any one to win it. The conditions were that a machine should fly seventy-five meters, nearly two hundred and fifty feet. Santos-Dumont had a plane which had been built for him by the Voisons, two brothers who had been experimenting with gliders. So far as people knew, no one had yet made a flight that was anything more than a mere hop. It is true that there were reports of the Wright brothers' experiments in the United States, but the Wrights apparently kept themselves shrouded in secrecy; nothing about them seemed to be definitely known, and rumors were not believed. Santos-Dumont in his plane, which was like a box kite, not only flew the required distance, but exceeded it considerably, and came to earth with only slight damage to his landing-gear. Within the next month or so the Brazilian millionaire made other successful flights at Bagatelle, the longest of which was two hundred and thirty yards. With that, the art of flight jumped into instant prominence, became the talk of the day, and the era of aviation had come. European

airmen made rapid progress, with France in the lead.

Now, of course, the Wright brothers had clearly anticipated this development. They were the first to achieve successful flight. Three years before Santos-Dumont gave the first public exhibition of mechanical flight, the Wrights had flown for short distances in the course of their famous experiments at Kitty Hawk, North Carolina, and a year later they achieved a flight of more than half an hour's duration. But they made no public announcements. They were distinctly not publicity hunters. Wilbur Wright, a particularly silent, thoughtful fellow, put it this way: 'The parrot is the only bird that talks, and it is not a bird of high flight.' Nor did the ridicule heaped upon the rumors about their successful flights make them any the more talkative. And then it was their desire to sell their invention to some Government. They opened negotiations. They almost closed a deal with the French authorities, but wanted too large a sum of money down. By now French aviation was developing so promisingly that the French decided that the Wrights' price was too high. Thus it was that while the Wrights hid themselves Santos-Dumont made his record flight, and French aviation leaped forward.

It certainly seems odd, as we go racing along at more than a hundred miles an hour, to look

back to aviation as it was a few years ago. Two hundred and fifty is now done often, and the speed record is well over three hundred. What would the boys at Bagatelle and Le Mans have thought of that? During the World War what a sensation it made when Fokkers appeared that were able to do a hundred miles an hour as a regular thing! Then pretty soon any plane that could not beat a hundred was slow molasses!

Down there is Fontainebleau Palace, where Napoleon signed his abdication before going into exile at Elba. This is beautiful country below us, with trim fields, graceful hills, towns nestled in valleys, lakes of silver, and meandering streams.

Now we are passing Dijon. I know it is a famous old city, that it was the scene of heroisms during the Franco-Prussian War, and all that. But for me Dijon has its more modern memories. Atterbury, then Vice-President of the Pennsylvania Railroad, had recently joined up as a general to help untangle rail problems. As a special honor the crack train between Tours and Chaumont was called the 'Atterbury Special.' It was to be a model of speed and efficiency. I took it from Tours to Chaumont one day. We were three days in getting there! We should have made it in less than one, but were held up somehow. There was one long day in the yards at Dijon. I had plenty of time to browse around the town, and par-

ticularly recall the enormous bakery where the bread was made for the American forces, dough for the doughboys.

We have been flying for two hours. It is misty and the ground is veiled, but I can see farms and great forests, rivers and ranges of low mountains. It isn't particularly exciting, and the smooth movement of the plane makes me drowsy. I was half asleep just now when a movement of the machine awakened me thoroughly. We were in a steep bank and turning. Under us was a wide river. A moment later I saw a city and near it an aerodrome with four planes lined up on the ground. It must be Lyons, our first stop. That river, then, must be the Rhone. But I had always thought that Lyons, the city of silk, was quite a large place, and that the Rhone was a large river. The town below us is rather small and the stream beside it far smaller than the majestic Rhone should be. However, it must be Lyons, because we are unmistakably heading for the aerodrome there.

We make a good landing, but stay right where we are, instead of taxi-ing over to a hangar. How very long the grass is! The flying-field at Lyons, one of the important French air stations, would be better kept than that. Now the pilot is out of his cockpit. He sticks his head into the cabin and explains that we have run out of water. His English has a French flavor.

'I have come down,' he says, 'for the sake of the security.'

A forced landing, the first we have had so far in more than twenty thousand miles of flying. But after all a forced landing for a plane is usually of no more importance than a hot box to a fast train.

Mechanics come running, and soon a lorry brings us water. A crowd collects around us, the usual thing when an aeroplane, or an automobile for that matter, has any trouble. We take off through the tall grass at three-thirty-five. The town at which we were forced to alight was Châlons-sur-Saone. I knew it wasn't Lyons and that the river was not the Rhone. That is some satisfaction, anyway.

The fields over which we fly are small, with hedge fences. There is much water on the land. Evidently the spring floods are not over yet. A stiff side wind is hitting us. It tips our plane away over to the left, so that we fly at quite an angle. I have to lean uncomfortably in my seat to keep an upright posture. Sometimes we swing over so far that I feel like getting out on the wing and holding it down. This riding with the plane halfway tipped over is not a thing to give one a feeling of stability. We pass over thousands of small fields. I wonder whether our Spad could get down in most of them? Very likely it could. It is so small and nimble that it seems as if it

could get along with a tennis court for an aerodrome. A little oil is leaking into the cabin. I have written a note and passed it out to the cockpit. The pilot reads it, and shakes his head, indicating that it's of no consequence.

Four-ten. Where is Lyons? This cabin is awfully stuffy, and has only small portholes for windows. It is difficult to get anything like a good view of the country around. We must be bucking a stiff head wind, because our destination is not in sight, although we should have reached it some minutes ago. Here's a big town on the Saone, Villefranche, no doubt. The valley is very wide, but I can see mountains on both sides. The Alps are on our left, green foothills first and lines of snow-capped peaks far beyond. Those are the delightful Alpine fastnesses of Chamounix and Geneva. The Saone, as we fly along its downward course, is dotted with islands. Along its banks are countless lakes, which no doubt will vanish before the summer is gone.

Four-twenty. We pass over a short ridge of hills and a haze of smoke looms ahead. We pass many bridges. We must be nearing the city of silk. Yes, here's another river, a big one, coming from the east. It's the Rhone. It looks as blue as indigo from up here, and at the point where we pass over it an island many miles long divides it into two streams. The Saone and the Rhone join each other at Lyons, and now we are above the

outskirts of the city. We fly high over its eastern edge and swoop down to the flying-field.

Physically Lyons is, for the most part, a new city. Historically it is quite old. It was ancient Roman Lugudunum, which Augustus made the capital of Celtic Gaul. After many ups and downs the city came to its worst descent of fortune during the French Revolution. Attached to the royalist cause, it revolted against the Convention, was captured by the Jacobins, was made the scene of frightful massacres, and finally ordered to be demolished. It had been in large part destroyed when the fall of Robespierre put an end to the Terror. After that, Lyons, as the center of French silk manufacturing, was rebuilt in handsome fashion and to-day is the third city in France and one of the newest and most splendid.

At the Lyons flying-field I hopped from one plane right into another, and saw the city of silk mostly from the air, flying to it and away from it.

We have another machine, though of the same kind, and we have the same pilot. I am not the only passenger now. A German is making the air voyage from Lyons to Marseilles. He has the cabin to himself. I am out in the cockpit with the pilot. The wind is tremendous, but it stirs my blood and brightens my senses. I pity the poor German chap inside. We are only a few minutes out, but he is ill already and spoiling the cabin floor.

AT AVIGNON, ABOVE THE WALLS AND BASTIONS OF THE POPES

NEAR THE CASTLE OF TARASCON WE LEAVE THE RHONE AND SWING SOUTHEAST TOWARD MARSEILLES

We follow the valley of the Rhone, famous for centuries for romantic beauty. The river is several miles on our right. Ahead are ranges of hills, and far away on the left are the Alps. That splendid peak a little behind us must be Mont Blanc, monarch of all the mountains of Europe.

Off to the right on the Rhone is Avignon, city of the Popes. A rocky hill rears its head beside the river and on its slopes lies the Palace of the Popes. We are reminded that for a long time Avignon took the place of Rome as the capital of the Western Church. We look down on the old ramparts that surround the city. Everything is very much of other times. Here reside centuries long past and we are flying over the Middle Ages. This ultra-modern man-carrying bird seems out of place in these skies.

Avignon vanishes. We leave the Rhone and swerve to the east. Several arms of the sea appear ahead. So the great port of Marseilles must be close at hand. There it is, in the dim distance before us, and there we see the coast line of the Mediterranean. But our plane does not go anywhere near Marseilles, not within twenty miles of it. The flying-field is away to the northwest of the city, on the shore of a Riviera lagoon, no doubt situated here for military reasons.

Our ailing German passenger is delighted to be on solid earth again. When I last see him he is happily stretching his legs. It is nearly seven

o'clock now. Evening is falling. A partial night's sleep and then off for Africa before dawn. I could have gone into Marseilles, but I was tired and I was warned that I should have to get up at an unearthly hour.

The little *estaminet* near the flying-field was no Ritz-Carlton. It afforded no more than an *omelet avec pomme frit* for dinner and a feather bed, hardly the thing for a sweltering night. I fell asleep remembering a remark attributed to Lord Dewar, the Scotsman who said that 'the man who wrote "Home, sweet home; there's no place like home," lived for thirty years in hotels — so he ought to know.'

Off at the dot of four-thirty A.M. with the mails for Morocco. It was the mail auto that picked me up at the *estaminet* at three-thirty. The body of the plane is full of bags crammed to bursting with letters, most of them, no doubt, from families at home to soldiers serving in Africa. Our machine is a Breguet, a former war observation type. It has no cabin, so I occupy the observer's seat behind the pilot. Millions of mosquitoes swarm around us as we make ready to taxi away. It will be a pleasure to shake them off when we get going, flying beyond their speed and above their height. While the mechanics tune up the motor, flames a yard long shoot from the exhaust. It always fascinates me to see the long, fierce streaks of fire when an engine starts

up. By moonlight we thunder across the aerodrome and then circle around three spidery wireless towers, their aërial beacon lights ablaze. For ten minutes or so we cut across the huge lagoon with dim flooded fields on our right.

Night flying is always beguiling. For one thing, it is so smooth. The winds are in general much lighter than during the day. It is the uncertain heat of day, with the sun beating down at ever-changing angles, that livens the wind. Aviators have long recognized that the quietest time for flying is after dark. It is delightful, too. I am out in the open with the night air rushing upon me at a tremendous rate.

At a height of a thousand feet we look down on a row of buildings. From their appearance in the moonlight, they may be army barracks — lights in every window. They must be army barracks or the people in them wouldn't be up at this ghostly hour before dawn. We cross a tongue of land, more flooded fields, and then a wide expanse of water. This must be the Golfe de Fos. The moon, nearly at the full, is riding high in the southern sky over the open sea, throwing a path of light across the Mediterranean.

To the north I begin to see the faint shapes of mountains. They become clearer every minute. The electric lights are on in every town over which we fly, but in fifteen or twenty minutes they won't need them.

The way to Perpignan takes us along the southern coast of France, that Mediterranean shore of Provence which is one of the fairest on earth, a land of legend and romance.

On our left is a tiny town with its characteristic circular form and its outer row of stone houses joining each other and making a wall. In the middle is a tall tower. In the faint morning light it looks like a Turner drawing. A moment later we are over a vast military aerodrome with something like forty huge hangars that seem to be made of corrugated iron. This looks like an enormous army training area. Hundreds of thousands of troops could parade here and have miles of elbow room. We are five minutes crossing it. That's how big it is.

At four-fifty-five we pass over a big river. It is wide and slow and without any sign of life, evidently the Rhone. Miles to the left, on the edge of the sea, a lighthouse flashes and wastes its power in the daylight.

Five-five. Nearly broad daylight now, and in a few minutes the sun will come roaring up. We are a little to the right of the shore, with flooded fields under us. This part of the Mediterranean is the Gulf of Lyons.

Five-twelve. Sunrise!

Five-fifteen. Even if it had come by itself this sunrise would be perfect. The fiery ball of light is behind us and streams its rays ahead of us as

we rush on. Green hills, many-colored fields, yellow shore, and the azure Mediterranean seem to leap at us with their colors. But the new-risen god of day seems to throw his choicest beams on a town of enchantment which lies surrounded by silvery ponds, lagoons, and canals. It is Aigues-Mortes, perhaps the most perfect medieval walled city in all the world, more perfect even than Avignon or Carcassonne. It is absolutely square, with massive gates and bastions. At the northwest corner is a high tower. The town was founded by Saint Louis. A large canal runs to the Mediterranean and at its mouth is a smaller town, to remind us that Aigues-Mortes is a port, and that it was thence that Saint Louis sailed on his two crusades. His son, Philip the Bold, completed the fortifications. Begun and finished in the same period and still in superb condition today, the battlements of Aigues-Mortes are absolutely symmetrical and stand as another age brought down to us unchanged.

We pass another coast town on a canal, but this one is right at the mouth and extends for a mile along a lovely beach. On the roof of a long building a single painted word gapes up at us — CITROEN. The Henry Ford of France has adopted American methods, and even gone us one better. He has taken the Eiffel Tower as an advertising medium for his light cars. Nor, as I observe, has he neglected the air traveler as a

possible purchaser of Gallic flivvers. Down here on the azure coast of the Mediterranean the name of CITROEN gazes up at the sky. Ahead is a long canal that runs parallel to the shore for miles and traverses a flooded region. Then a high hill juts out into the water, with a town at its base and pretty houses all over its green sides. Out at sea to the south a big fishing fleet is plodding along. At Frontignan we see big petrol tanks. Cette — beautiful place and big, too. It is a combination of Venice, with large canals in the business quarter, and Naples, with handsome houses on the hills. They are like castles and châteaux and their grounds are masterpieces of landscape gardening. A mountain rises near the city, and on top of it is a wireless station. Cette is one of the largest French ports on the Mediterranean, so we see many ocean-going vessels in the harbor.

Five-forty-five. The morning mists are slowly vanishing. Lofty, glistening, snow-capped peaks ahead — the Pyrenees. The country below is a part of a rich coastal plain. A town on a wide canal about three miles from the Gulf. Now a fine beach with many tents and morning fires blazing. It is a glorious place to camp. Another small seaside resort with a wide beach. Out to sea is another fishing fleet, scores of little boats with sails bellied out in the wind. Those two streams below are the two mouths of the Aude River.

Six-three. A small canal runs into the Gulf. Two rows of bath-houses are on the beach. That town over there on the small lake is a couple of miles inland. In the middle of it is a hill, at the very top of which rises a high stone tower, which looks very old. Now a big lake on our right. On its northeastern corner we can just see the city of Narbonne, ancient Narbo, the Roman capital of Gaul. Cæsar had his headquarters there, and I suppose the time was when this country had as many Cæsar's headquarters as New York State has Washington's headquarters. The sight of Narbo brings back memories of school days. Long and hard, and mostly in vain, did I ponder over Cæsar's account of his wars in Gaul.

Six-seven. Passing La Nouvelle, over there on the south side of the canal that forms an outlet from the big lake to the Gulf. The foothills of the Pyrenees are now on our right. The snowy peaks ahead look quite close, although they must be thirty miles away. So far we have flown over water about half of the time, but now we are cutting inland. Perpignan is some miles from the Gulf. Crossing fields with stone fences. To our right is a fine castle, some fortress of the Middle Ages. The snow-capped peaks are right at hand. They can't be more than ten miles away. Now we are crossing a stream. Many towns in sight. Here we are.

This trip along the Mediterranean coast has

been indescribably beautiful, one long succession of lovely hills, lakes, streams and beaches, quaint towns, châteaux and castles — and the sea. The blue of the Mediterranean when seen from shore cannot be matched anywhere in the world. From the air it has an even richer and more brilliant tone. You peer so much deeper into its sapphire depths.

CHAPTER XXIX

CASTLES FROM THE AIR

PERPIGNAN is the main air base on this France-to-North-Africa skyway and is the air junction for the early morning planes coming from Toulouse on the west and Marseilles on the east. We drop down in front of the hangars of the Lignes Aériennes Latecoère at six-twenty-five. The *chef du pilots* tells me that I must change planes, and points to another snorting Breguet which I am to mount. I climb into the open cockpit and sit facing forward while a camp stool is dropped in front of my knees for another passenger. We face each other with our knees interlocked. Then the Moroccan mails are crammed in all around us until every crevice is filled and our arms are all that we can move. This two-seater plane is obviously built to carry just two people, the pilot in the front cockpit and the second person in the other. But not only are there three of us starting for Barcelona, but we have a heavy load of mail as well as a lot of loose packages containing heavy things like storage batteries. I wonder if she will fly out of the field with all this aboard?

At any rate, it is still early in the morning and the air near the ground is so dense that any plane ought to get off with more than her normal load.

It seems odd, though, that they do not weigh us. Apparently passengers are decidedly secondary on this semi-mail and military route.

We're off all right, hopping over the roofs of Perpignan, so low that the pilot can wave to his wife — that is, we assume she is his wife. Just over a labyrinth of narrow streets and an ancient citadel, we start to climb and head straight for the Pyrenees which are only a few miles away. Instead of skirting the coast, we are saving a few minutes by steering in a bee-line toward Barcelona, right through a mountain pass. The loftiest, snow-capped summits of the higher Pyrenees are due west of us now and we are in the foothills, above endless terraced acres of vineyards.

Within ten minutes we enter the pass, which reminds me somewhat of the famous Khyber between India and Afghanistan. On a mountain-top halfway through is a massive fort. If an army ever laid siege to it, four walls would have to be scaled, each higher than the other. It is one of the most impressive forts I have ever seen.

A minute more and we are looking down on Spain. Although this pass is fairly long, it is hardly a fifth the length of the grim Khyber. Range after range of jagged barren mountains are our companions to the west. Only the farthest one away is snow-capped. From up here in the sky the little mountain towns that we flash over look just like the mountain villages of south-

ern France, or of Italy, Greece, Albania, or Syria. Olives and grapes seem to be almost the only things that the peasants grow.

We must be at least twenty-five miles inland; the sea looks far away and indistinct. This seems to be a region of forts. Here is another, a great Spanish mountain citadel this time. At seven-fifteen we pass over the second river we have seen so far, and three minutes beyond the fort we look down on a small city with its miles of railway yards, its great open market square, vast cathedral, and a half-mile to the west a circular stadium, like a Roman arena, where the bull-fights are held. When I point to the name 'Gerone' on my map and look questioningly at my fellow passenger, whose face is within eighteen inches of mine, but who still cannot hear a word that I say because of the roar of the motor, he nods in the affirmative.

Here is a curious cloud phenomenon that I have never seen before. About five hundred feet under us are about fifty separate, small, very white, fluffy clouds. One is quite a bit ahead of the others, and the rest are following it across the sky at a fairly rapid pace, like a flock of birds or a formation of airplanes. At seven-thirty we cross a second range of mountains. The first ones we looked down on this side of Perpignan were about nine thousand feet high. This range is hardly that. Just beyond is another river and now

the sea is quite close again. My map must be a dud because the river is not even marked. This coast is even more beautiful than the valley of the Rhone near Avignon. Nearly every lofty peak and prominent crag has its castle or old tower. Many miles out across the Mediterranean a bank of white clouds hides the Balearic Isles. If we could pull that curtain of mist aside, we could easily see both Minorca and Majorca despite the fact that they are fully a hundred and fifty miles to the southeast of us.

Here we are flying right above the coast line. Every few miles now there is either a village or a fair-sized town. The road looks as though it would be ideal for motoring. The hillsides are sprinkled with castles and villas. The Mediterranean is at its bluest, as blue as any mountain lake in Switzerland. The region reminds me of the Italian Riviera, south of Rapallo. What a gorgeous coast it is!

Here is a city without an arena, something almost as uncommon in Spain as a city without a motion-picture theater in America. Evidently the folks down there in Mataro — or is it Badalona? — attend the arena in Barcelona for their picnicking and their gore.

At eight o'clock to the dot we pass over the outer harbor, the seaplane base, rows and rows of ships, and then across the heart of a vast city, with its plazas and boulevards. It is Barcelona,

the second largest town in Spain and one of the most important seaports on the Mediterranean. The bull-ring here, next to the harbor, is the most conspicuous thing in sight and looks almost as large as the Coliseum at Rome. South of the city, with motor switched off, we glide over a river and then across fields completely inundated by the spring floods. We land to refuel before setting off through the sky toward Africa. So far, according to our Latecoère time-table, we have flown a thousand and ninety-six kilometers since leaving Paris. It seems as though we have surely covered more than six hundred and eighty-five miles. The difference in climate and scenery is as striking as though we had jumped from Maine to Brazil. According to our time-table our flight from Paris to Fez and return will total fifty-six hundred and fifty-eight kilometers, or approximately thirty-five hundred and forty miles! This is one of the longest air lines in the world. Its only rivals for length are the one from Paris to Constantinople and Angora, the Berlin to Moscow route, the United States Air Mail line from the Atlantic to the Pacific, and the remarkably successful system of passenger planes that operates up and down the west coast of Australia between Perth and the pearl fisheries around Broome. Of these the Latecoère on which we are now flying and the western Australian airways are the more picturesque. From Perth to Broome

is a distance of fifteen hundred miles, part of it well within the tropics and nearly all of it over sparsely settled areas. The planes follow the same route as the telegraph lines and each pilot carries a field-telephone set so that he can tap in, in case of a forced landing, and report to the nearest air dépôt. Some of the flying-fields out there in western Australia are frequently boggy, so the tires are encased in staves taken from oil casks, forming a sort of caterpillar tread. This is said to be the most successful airway financially in the world.

Eight-thirty A.M. Here we are off again. Our pilot this time is a youngster who looks hardly twenty. More bags and bundles have been stuffed into the space around us, so we are in a tighter squeeze than ever. Ten minutes out from the Barcelona aerodrome we fly a thousand feet above a real 'castle in Spain,' with its fantastic towers, turrets, and minarets, right on the edge of a lofty precipice. It looks so beautiful and pink that surely it must play a part in some old Moorish legend. It is the Castle of Montserrat, one of the oldest and best known in Catalonia, 'for eleven hundred years a refuge, a sanctuary, an enchanted dwelling-place halfway between heaven and earth.' Then for ten minutes we look down on mountains even wilder than the Pyrenees. Some of them rise abruptly from the sea with tunnels for the trains that run south

toward Alicante and Malaga and on to Gibraltar. Just over the mountains we sight a great stone saucer track where the Spanish autospeed races are run. Then we pass the city of Villanueva-y-Geltru with a ridge of jagged saw-tooth peaks off to our right that remind me of King Solomon's Mountains in Arabia. Far out at sea the bank of clouds is lifting a little and we can just make out the coast line of Majorca and Minorca.

We are a mile above the Mediterranean now and several thousand feet above the clouds that cover the Balearic Isles. Under us is an old fortified city, the seaport of Tarragona, with its renowned *Balcon del Mediterraneo*, its mighty medieval cathedral, its Roman aqueduct, and cyclopean walls. Of course there is another bull-ring here, exactly like the one in Barcelona. They say, too, that this was the home of Pontius Pilate. For a few minutes we fly out over the Mediterranean and then pass over a glorious flat region, the delta of the Ebro River. It is all cut up into fields of perfect geometrical design, most of them flooded. The peninsula is about twenty miles wide and a striking sight from the sky. Ten minutes later we pass another seaport that makes a stunning picture, and according to the map it has the romantic name of San Carlos de la Rapita. The Mediterranean is so still and clear that we can look right down through the water for a hundred feet or more. Here and there we

can make out cliffs under the water and deep blue blotches that must be rocks covered with vegetation. It would be a simple matter for an airplane to spot an enemy submarine on a calm day like this and then bring it to the surface with a depth bomb.

The landscape is changing again and all the world seems to have taken on a reddish hue. Nearly every field has from twenty to a hundred trees sprinkled about it, probably almonds or apricots. This hop from Barcelona to Alicante is one of the longest on the journey from France to North Africa, the distance being approximately three hundred miles. The country looks more and more like that part of Arizona you fly over on your way from Yuma to Phœnix, and the mountains look as forbidding as the Crater and Growler Ranges in the Arizona Desert. At ten-twenty we look down on the city of Castellon de la Plana with its castle and bull-ring. Then four other large towns flash below within a few miles of each other. The mountains are thinning out and we are descending lower and lower, with the sea on our left and a vast plain to the west. There is a lonely steel mill with its rows and rows of barracks-like houses for the workmen. We are approaching the seaport of Valencia. This seems to be a region of orange and tangerine groves. The harbor, with its great stone breakwater, is the busiest we have seen on this journey, but the

main part of the city is inland about two miles. From an airplane flying at an altitude of five thousand feet it is as easy to get a good view of a city two miles away as it would be if the place were directly below. Valencia, the city of flowers, is another striking Spanish city when seen from the sky, with its Cathedral of *Nuestra Señora de los Desamparados*, its *Plaza de la Constitución* and its massive towers. For a short distance south of Valencia we fly over sandy shore, rocky cliffs, and dazzling blue sea, and then head toward several barren mountain ranges that lie between us and the plain behind Alicante. On the way toward the peaks we look down on thousands of geometrical fields, most of them inundated by water from the irrigation ditches, the famous *huerta*, or vast Valencian garden plain, irrigated by eight canals built by the Moors before the reign of Boabdil, and then pass over a string of big inland towns, each with its Roman-looking arena. The second one is Játiva, home of the Borgias! Over there is the twin-peaked hill with the twin castles. Rulers have dwelt here since the time of the Phœnicians. Among them have been Visigoths, Greeks, Romans, Moors, and there the Borgias feasted. Then for miles and miles we look down on slate-colored fields that appear silky, like a moleskin coat, and on over several more ranges of dreary mountains with terraced hills and cultivated valleys in between.

At eleven-forty-five we land on the aerodrome at Alicante, just west of a rocky promontory, a second Gibraltar, with its medieval-looking citadel, rising naked and sheer from the flat plain. The citadel is in reality the Castle of Santa Barbara. A whole row of Breguet two-seaters are lined up here, for this is another important air base on the Moroccan air route. The pilot says we have a thirty-minute stop to make, so we draw our cramped legs out of the cockpit and stroll over to the adobe canteen where a Spanish señora serves us a luncheon of omelet, oranges, and Alicante wine. This is a desert, treeless region almost as hot as that notorious extinct volcano crater in which the inferno-like Arabian city of Aden is situated. We can tell that we are nearing the Sahara.

As we taxi across the aerodrome, head into the wind, and go roaring off, we kick up a vast cloud of sand and dust. Ten minutes out we look down on the first palm groves that we have seen and then pass over a forest of them to the north of the sun-baked city of Elche. The palms, planted in rows, are from a hundred to two hundred years old and produce the finest dates in Spain. We are surely in a tropical desert belt now. Ahead is a dense haze much like a Sudan sandstorm. Our pilot, young Paul Noailhat, has on a cloth mask that completely covers his face except for the slits through which he peers. This is to protect

him from the blazing desert sun and flying sand. It gives him a grotesque, unearthly appearance.

Twelve-thirty P.M. Here we are above a perfect example of what the Bible calls 'the desert and the sown,' with green fields on the left and wild barren mountains to the right. We are bowling along seven thousand feet above the Spanish desert and are crossing another range to what appears to be an uninhabited region, just beyond the picturesque city of Murcia and the rocky peak and castle of Monte Agudo.

Two P.M. Here we are, having a totally unexpected close-up look at one of the loneliest parts of Andalusia, land of *mantillas*, huge tortoise-shell combs, and black-eyed *señoritas*. We are on the ground, and have been here, lying under the shelter of our lower wing, for the past hour trying to keep cool, I and my fellow passenger, a Latecoère mechanic who is being transferred from Perpignan to Fez. Our pilot has struck out across the desert in search of help. A little way south of Murcia, just as we were about to fly over the jagged Sierra Nevada Mountains, something went wrong with the motor. With it missing and banging as though it would shake itself out of the cowling, we kept on for several minutes until he sighted a flat stretch of desert. We circled round and round until Noailhat decided that it was a fairly safe place to park. As soon as we came to a stop, the pilot hopped out,

pulled off his mask, his fur-lined boots and flying-suit, and struck off in search of some habitation in order to telephone back to Alicante for a relief plane.

He has been gone for nearly an hour, but so far there is no welcome hum in the sky to cheer us up while we swelter. This section is said to be the inferno of Europe — the hottest spot this side of the Sahara. Within fifteen minutes after we came down, people started to spring up out of the desert from all directions. Soon fully a hundred Spanish peasants are crowded around us, gesticulating, laughing, touching the wings of the Breguet to see if it is real, and pointing at us. Nearly all of the men wear brown leather aprons and have great curved knives in their hands. Then there are women carrying babies on their hips, and twenty or thirty youngsters, ragamuffins, lying in the sand around us roaring at the facetious remarks of the chief wag. All wear primitive cloth slippers.

The heat is 'damned awful' as the Australian cavalrymen used to say in the Sinai Desert. A tame little experience like this gives one a vivid idea of what it must have been like for the poor army airmen who were unlucky enough to have forced landings in the Sahara, Sinai, and Arabian Deserts during the World War.

At two-fifteen the pilot came back with the news that he had found a telephone and that a

relief plane should arrive shortly. From here to Malaga ought to be a flight of something under two hours and from there to Tangier by way of Gibraltar is another hour and a half, with Rabat two hours farther south across the African Desert. So if we are not delayed too long we may still get through by nine o'clock to-night, in plenty of time to catch the early morning plane to Fez. We hope so, because the planes from Rabat to Fez fly only about once a week now and, if we should miss connections by having to spend the night here at the foot of the Sierra Nevada, I could never make this North African journey and get back in time to catch the steamer on which we are booked to sail from Cherbourg.

Granada, June 1

Well, here I am sitting on a balcony at the Alhambra. I didn't get to Morocco after all. Thereby hangs a tale.

CHAPTER XXX

WE CRASH IN THE MOUNTAINS OF SPAIN

We didn't have to do any more petty fretting about getting to Rabat in time to catch the Sunday morning plane for Fez. Lady Luck stepped in and took care of all that. Just at the present I am satisfied to be here on this balcony at the Alhambra, satisfied in fact to be right on this planet instead of somewhere up in the Milky Way strumming a harp.

During these many months of cruising over the skyways of Europe, like all who travel by air, especially passengers, who, unlike the pilots, have nothing to occupy their minds, I have spent considerable time — far too much, no doubt — in wondering just what it would be like to be in a serious accident. I have often wondered just how much would be left of any of us if the plane were to go into a nose-dive and plunge to the earth. Well, I know now!

When the pilot returned from his trek across the Andalusian Desert in search of a telephone, the three of us stretched out in the shade of the lower wing for another half-hour, trying to get what relief we could from the furnace-like heat. We amused ourselves watching the antics of the Spanish peasants and children, who frankly re-

garded us as freaks. To them we apparently had dropped out of the sky from some other world. But at two-forty-five we heard the hum of the relief plane. A moment later we saw it circling in the cloudless sky, a mere glistening speck, a mile above us. Noailhat seized a pile of fagots that he had gathered, held them under the engine, opened a valve, and soaked them with gasoline. Then he ran out into the middle of the level space where we had landed, touched a match to them, and sent up a column of smoke as a signal to let the other pilot know the direction of the wind and where to land. The second plane got down all right, and in it were the chief of pilots from Alicante and an expert mechanic. Instead of trying to fix our ship, they immediately switched the mail and all our baggage into their plane, the idea being that we could push on without any further delay while they could repair our disabled motor and then fly back to Alicante in the cool of the evening.

In fifteen minutes the five of us had transferred the mail, and Noailhat, the mechanic from Perpignan, and I were in the second ship ready to take off. Our faces by now were as red as fire from the blazing sun through which we had flown since early morning. Tropical helmets would have been useful on this jaunt because they are just as desirable in Andalusia during the summer months as they are in Africa or India.

Waving *adios* to the chief of pilots and his mechanician, we went roaring across the desert. We had come down on a fairly level stretch of twenty or thirty acres, but just beyond were big boulders, stumpy olive trees, and a mule. We roared nearer and nearer the trees, and it looked as though we were going to pick up the mule on our nose and take him along. The plane gave no sign of leaving the ground, although we were running with the throttle wide open. It looked as though we were headed for a smash, the sort that Captain René Fonck had with his Sikorsky trans-Atlantic ship at Roosevelt Field. But Noailhat throttled down and switched off just in time.

Swinging her around we taxied back to the other plane and our pilot held a consultation with his chief from Alicante. Noailhat insisted that he had used every ounce of power in the engine. The chief then turned to the Perpignan mechanic who was sitting in the rear cockpit with me, and asked him if he was bound for Africa on company service and whether it would make any difference if he got out and waited for a few days. Then he told him to climb down and thus lighten the load, but just as my fellow sardine was throwing his leg over the cockpit the chief of pilots changed his mind, told him to crawl back, and ordered Noailhat to take a longer run this time. He said that we ought to be able to get up more speed with a

longer run and thus manage to get into the air. If we could, why, it would be all right. If we failed, why, then the mechanic could get out and fly to Fez a few days later.

So once more we went roaring over the bumpy field. This time we seemed to have better luck. Two thirds of the way across the flat toward the olive trees, she bounced into the air and started to climb. My companion from Perpignan smiled and gave a sigh of relief because he was anxious to get on to Fez and had no desire to be marooned here in the Sierra Nevada. A second or so later we were about three hundred feet above the olive trees, but she was not climbing as she ought to. Then we started to turn to the right. There was something about the way in which we were turning that made me suspect instinctively that all was not well. In turning in the air a pilot always banks over, tipping the plane either in one direction or the other. This is one of the elemental rules of traveling in three dimensions. But we were turning flat and we were losing flying speed. We got around and were facing in the opposite direction, when in what seemed like less than a split second she nosed down. The eyes of the French mechanic sitting facing me were wide with terror. He screamed. Then the crash came. There was a terrific shock and roar. From blazing sunlight we had suddenly dived into a world of blackness. But this was not caused by my

being knocked unconscious. It was merely that the plane, diving into the desert, had thrown up the earth like the eruption of a volcano. The moment we struck, the pilot yelled, the mechanic yelled, and for all I know I may have yelled too. At any rate, the same thought flashed into the minds of all three of us — that the plane was in flames and that we should be cooked alive.

We all three jumped from the wreck at the same time. Dived, instead of jumped, would be a better word, but the accurate word isn't in any language. We each gave a wild leap and went over the fuselage head first. Never in my life, except that midnight in Berlin when the machine gun started spitting at us, had I moved with such speed. Scrambling to my feet I staggered a few yards to get clear of the plane, expecting the gasoline tanks to explode. But the pilot and mechanic stayed where they fell. Judging from the groans and cries both were considerably injured.

All this time the engine was making curious, unearthly noises like the death-gasps of some monster. Gasoline was pouring from the tanks in cataracts. Fortunately it did not explode. This was mighty lucky and probably due to the instinctive act of the pilot in switching off his ignition the moment she nosed toward the earth. He knew what to do. This was not his first crash. Also the engine could not have been running long

AIGUES-MORTES
The most perfect mediæval walled town in all Europe

OUR FLIGHT TO AFRICA ENDS ABRUPTLY AT THE FOOT OF THE SIERRA NEVADA IN ANDALUSIA

enough to get any of its parts red-hot. If it had, then the gasoline tank surely would have gone up and finished the job. I ran to Noailhat first because he had been sitting in the front cockpit, the 'golden chair,' right behind the engine, and I imagined that he might be in far worse shape. He was holding his head. I pulled the mask off his face and saw a tremendous bulge in his forehead. He was also clutching his chest as though he might be injured internally. After hauling him out of range of the gasoline tanks in case they might explode, I picked up the mechanic, who seemed to be in equally great pain and had blood streaming down his face.

It was several minutes before the other two airmen whom we had left on the ground when we started and the crowd of Spaniards got to us. They were about a quarter of a mile away. At first the country folk stood around, wide-eyed, apparently too frightened to offer any help. They acted, too, as though it was all a part of a show which they had come to see. Our throats were choked with the dirt and sand that had shot up over us. I tried to get the peasants to go for water. Each one shouted to the other to do it and no one did anything. But the chief of pilots and the Alicante mechanic, who had come up a few minutes after the others, went off on a run.

As each minute passed, the injured mechanic, who had been sitting in the rear cockpit with

his knees interlocked in mine, grew weaker and weaker and his face began to puff up. Both eyes were swollen completely shut. I stretched him out in the shade of one of the smashed wings. The gasoline had emptied into the sand by now and there was no longer danger of fire.

For the first five or ten minutes after the crash I felt no effects from it whatever except that I was covered with a layer of dirt from head to foot. Apparently none of my bones had been broken and I was not cut. I had been too busy, vainly trying to do something for my far less fortunate companions, to think of anything else. But now that the crowd had gathered around and the other two airmen had gone off in search of water, things began to swim before my eyes and I crumpled up for a bit. Sven Hedin had given me, in Stockholm, a copy of his 'My Life as an Explorer,' and the night before, in that little *estaminet* near the Marseilles aerodrome, I had been reading the thrilling chapter of where he had got lost in the Central Asian Desert and of the horror of those days when they struggled across the sand-dunes without water and food and half dead. He had lost hope of getting out alive, and as he grew weaker and weaker he counted his own pulse as a scientist might watch the development of some laboratory experiment. I did the same, and it was certainly doing the 'double-quick,' almost too fast to count. Then the aches and pains

started to develop, but at the same moment I felt a curious glow of exhilaration. I was hilarious and wanted to laugh, laugh in that idiotic way I had on another occasion, when a dose of gas knocked me out on the Italian Front. And when I looked at the plane and saw how completely wrecked it was, I wanted to do a Highland fling for joy. It seemed almost too good to be true, incredible, in fact, that any of us could have been in that smash-up and climbed out of that crumpled-up pile of wood and metal alive.

The shock had smashed the tail assembly and broken the fuselage as you would snap a stick over your knee. The wings were crushed and twisted. The undercarriage and wheels had been flattened out as though there never had been any. The mail and baggage compartments, shaped like torpedoes and suspended from the lower wing, had been smashed to smithereens and the Moroccan mails were scattered all around the scene. Of course the propeller had vanished into thin air — all except a piece about eighteen inches long that I brought away as a souvenir. Even the heavy 280 H.P. engine had broken in two and lay there ready to be scrapped. Although we supposed the pilot had cut her off, the engine still whined and the last drops of gasoline were trickling into the sand. Every part of that Breguet mail plane was wrecked — except the two cockpits.

Providence had certainly smiled on us, for our

escape was about as miraculous as any escape could be. Our smash was the same sort of thing that had happened to Commander John Rogers and afterwards to Captain Noel Davis. When you go into a nose-dive at three hundred feet above the earth, there is no chance whatever to straighten out your plane, and generally you are in for it. You could not blame me for feeling happy. Had I been alone I should have danced for joy. But the sufferings of my two companions checked that.

While waiting for the water to come, I took several snap-shots of the smash. When the crash came, I happened to be holding my heavy Graphlex camera in my lap, so it suffered very little from the shock. But Noailhat and the mechanic were looking so miserable that I did not humiliate them by taking their pictures too.

In a little while the Alicante mechanic, with his big bandana handkerchief tied over his head like an Arab sheik, arrived with an earthen jar full of water. We poured some of it down the throat of the wounded mechanic, who had become unconscious. A motherly Spanish peasant woman moistened her apron and held it against his throbbing forehead and washed the blood off his face.

We piled the scattered mail in a heap. Then in a springless Spanish cart, drawn by two ponies, we were hauled across the desert and over a

bumpy road to the little town of Alcantarilla in the province of Murcia, about fifty miles inland from Cape Palos and the seaport of Cartagena. I had ended my jaunt from Paris to Fez in a lonely valley between two ranges of the Sierra Nevada Mountains in Andalusia, land of the Moors, and within an hour's flight of ancient Granada.

In Alcantarilla they took us to the only hotel, a little two-storied Spanish inn called the 'Hospedaje y Casa de Comidas,' where they gave us each a drink of cognac and a bed. Several Spanish doctors came, dressed my companions' wounds, closed their shutters to darken the rooms, and forbade any one to enter. That was the last I saw of them. The doctors said that, although quite seriously wounded, they were sure they would recover shortly and that they would be well taken care of at a local hospital. I left them in the hands of the chief of pilots from Alicante. It was fearfully hot in Alcantarilla. I found it difficult to sleep because of new bruises that were turning up, so I caught a night train for the cool upper regions of the Sierra Nevada. Some months later I had a letter from Noailhat. He had recovered and all but forgotten the crash. The mechanic got well, too.

Ever since reading Washington Irving's 'Alhambra,' when I was about ten years old, I had wanted to visit the romantic Moorish city of

Granada. Here I am, quite unexpectedly, thanks to our little flirtation with Fate down there in the desert. As I tossed sleeplessly in the fierce heat at the 'Hospedaje y Casa de Comidas,' in Alcantarilla, I had visions of sitting beside a Moorish fountain in the Court of the Lions, with the cool breezes blowing in from the snow-capped mountains and with a languorous Andalusian beauty strumming a guitar. Here I am in Granada and, even though there is no maiden, all is well with the world. This is the first trip on which my wife has not accompanied me. I wonder if she has been the mascot until now? At any rate, I am glad she missed this crash and glad that we happened to have it in a remote corner of Spain, where no news of it would be likely to reach her and spoil her shopping in Paris.

CHAPTER XXXI

PARIS TO LONDON — OUR LAST FLIGHT

WHEN I got back to Paris and told my wife about my little crash in Spain, she said:

'How interesting! But you have arrived just in time. Come down to the Rue Saint-Honoré with me. I want you to meet Mademoiselle Augustine and see the pretty frocks I have picked out. And don't forget your travelers' checks.'

So next day, in a taxicab piled high with boxes of fluffy things, plus one small hat for Monsieur whose derby had been wrecked at the foot of the Sierra Nevadas, we turn up at Le Bourget ready to take off for London.

I'll frankly admit that my adventure in the desert of Andalusia had taken a little of the edge off my keenness for flying. Nevertheless we had grown so accustomed to air travel by now that we did not intend to end our journey by crossing to England on any prosaic Channel ferryboat.

Two companies operate over this Paris–London sky route: Imperial Airways, the British line, and Air Union, the French. We are taking the former. Three giant Imperial air liners are needed to handle the flocks of migratory tourists this afternoon, and we are booked for the third. The first is the largest, a twenty-passenger Armstrong-

Whitworth Argosy with three 380 H.P. Jaguar engines. The second is an eighteen-passenger Vickers Vanguard, a glistening, light gray biplane. They are the largest we have seen in all Europe. The other is a twelve-passenger, twin-engined Handley-Page biplane.

The Controller of the airport inspects our plane and endorses the papers on which are listed both passengers and cargo. We are hurriedly shot through the perfunctory outgoing passport and customs formalities, and then weighed along with our bags on which there is plenty of excess this time. The rigger ushers us into the cabin, tells us which chairs to occupy, and with an unusually loud roar and a terrific burst of speed we mount into the air. In a few moments the hangars of Le Bourget, the spidery wireless structures, the roofs of Paris, and even Eiffel Tower, disappear from sight.

Our take-off was scheduled for five P.M. and we get under way to the dot with the sun streaming through a crack in a black bank of clouds. Flying over the river Oise we head northwest toward the Somme.

The weather has been fickle all afternoon, and by the time I have these lines jotted down in my notebook we are flying through our first shower. Half the sky is full of billowy dark clouds piled on top of each other to a height greater than that of Mont Blanc or even Mount Everest. Now and

OUR LAST HOP
From Paris back to London

THE FAIRY-LIKE CASTLE OF SAINT-MICHEL

then a streak of lightning darts across the heavens like the fang of an aërial dragon. What glorious flat country this is between the Oise and the Somme! It looks like one vast aerodrome.

We are roaring along at an altitude of some eighteen hundred feet, and even this huge biplane, the largest in which we have ever flown, is swaying from side to side like an aërial cockleshell. As we hurtle through the sky at a speed that all but annihilates time and space, my thoughts go back for a moment to that crash in Spain. But what a difference there is between this giant Handley-Page with its comfortable cabin and that little two-seater Breguet where I sat out in the open air! The simple truth of the matter is that the Breguet was nearly ten years out of date. It was nothing more than a World War observation ship, almost as different from this modern air liner as were those first high-seated horseless carriages from the highly developed limousine-automobile of to-day.

One way to get a line on the safety of modern flying is to find out what attitude the insurance people are taking. We all know how conservative they are! While we have been flying around over Europe I have had a friend in London get in touch with fifty-three leading life insurance companies. He wrote me the other day that of these, forty-two state that accidents while flying in no way interfere with existing policies, and thirty-

eight say they are ready to include flying mishaps along with other ordinary accidents in writing new policies.

This is illuminating when we remember that the flying-machine was only invented a few years ago. Why, at one time insurance companies refused to include the 'bicycle hazard'!

For many years insurance companies outlawed flying — nor could they be blamed. The War stimulated aviation in a miraculous manner. But in one way it did a vast deal of harm. It gave the average person the impression that the flying-machine was just 'another of those diabolical death-dealing instruments.'

After all the airplane did burst upon us as an engine of war. So it is only natural that it should take a long time to get this notion out of our minds. But pioneers of long-distance flights, lads like Lindbergh, are demonstrating to us how amazingly reliable is the present-day airplane motor. These long-distance jumps are sufficient proof to most of us that it is a simple matter to keep planes and motors in well-nigh perfect trim for short flights of a few hundred miles along regular commercial air routes where there is an excellent ground organization at every aerodrome.

Five-thirty P.M. Passing over Beauvais. The fields are vivid green from to-day's showers. We are swinging to the right now and heading due north. Our wireless antenna is dangling a hun-

dred feet under us and our pilot is in constant telephonic communication with the control tower back in Le Bourget. Apparently they have advised him to swing north and run around the storm. There goes another streak of lightning. The farther he keeps away from those black clouds, the happier we shall be.

Our two big motors are slung between the wings on either side of the cabin and are in full view. They have no hoods, and their appearance, covered as they are with hundreds of little pieces of metal tubing, joints, chains, pistons, and wires, doesn't exactly increase one's feeling of security. It looks as though there are a thousand gadgets to go wrong. But of course I am one of the sort to whom all machinery is a dark mystery. I couldn't even repair a lowly lawnmower.

Comfortable though this cabin is, it is not difficult to imagine how luxurious they will be within a few years. Your air liner of the near future will be powered with super-engines, and outfitted with every article of luxury that you can think of excepting a flying swimming-pool. It will be capable of sliding through the sky with little regard for weather and at speeds that will make now distant continents seem like nextdoor neighbors. We have reliable engines to-day. We have planes so stable that they are almost fool-proof. Then, too, we have installed wireless telephony along many of the regular airways en-

abling a pilot to know what his weather is going to be like up ahead.

Absolute safety? Why, we can never get that with any type of transportation. Do you remember the day when railroad companies in Europe had to hire folks to ride in order to convince others that it was safe? I don't, but some of our parents do. During this journey I have saved what current newspaper clippings I have seen relating to railway accidents. I have pasted these in the back of my notebook, and you should see the number of pages they cover. I turn to them and the first one to catch my eye tells of a wreck at Munich in which thirty were killed. I have also kept a careful record of what has happened in the air during these same seven months, and the only accident was the one in which I lost my hat in Spain, and that was on a flight over a military route in an overloaded plane of World War vintage. Why, more people are killed every year in any large city than in the entire history of aviation.

My wife and I feel, as we near the end of our twenty-five thousand miles of skylarking, that when it comes to a choice between the airplane and the automobile we vote for the former. Some of our most thrilling experiences have been on wild automobile rides between airports and hotels. Most of the thrills we have had in the air have been imaginary. When the weather is

bumpy, you certainly do get flung about a bit. That's what is happening to us right at this very moment. We are still skirting the edge of the black area which hides Amiens. A few hundred yards to our left sheets of rain are falling. But these air bumps have less effect on our plane than have the waves of the sea when they slap the sides of the Leviathan or the Berengaria.

Five-fifty P.M. We are plunging right through the storm-clouds now. The pilot keeps talking into his microphone and no doubt he is being told that the rain belt is quite narrow here. The mechanic is kept busy wiping the windshield for the pilot.

Five-fifty-five P.M. We are turning west now, flying straight toward a streak of light. Here is a city with a great cathedral right under us: must be Amiens. At any rate, we are through the storm, the sun is shining, and under us is the winding Somme. We are back again in the stretch of sky where so many British, Belgian, French, and American airmen flew to fame during those war days that now seem so long ago. It was right up here above Amiens somewhere that Colonel Bishop won his D.S.O. To those who watched from the trenches it must have seemed like a mad affair. High above were three dots and not far away two more. They moved slowly back and forth. All five were decorated with a fantastic array of colors and patterns, circles of

vermillion on grass-green, or orange moons on violet. The German pilots of those days painted their machines with every weird fancy they could think of until they were freaks of wild, impressionistic art. Civilians were likely to surmise some elaborate kind of camouflage, but it was merely a case of the Teutonic imagination running riot.

All five planes were German, on artillery observation work over the Allied lines. Another speck appeared and moved across the sky toward the five. Another German plane hurrying to join its comrades? But with a pair of high-powered binoculars you might have been able to make out its markings. They were not Teutonic. That plane was the famous Blue Nose with 'Bill' Bishop, of Canada, at the joy-stick.

Bishop was playing a lone hand that afternoon, like a knight errant of old out seeking an enemy to conquer. He had just stumbled onto what he considered a piece of rare luck. He had gone out that morning in command of a large squadron escorting photographing planes. The cameras did their work. Then the flock of war birds struck out for home convoyed by Bishop's protecting wasps. Below them appeared an enemy two-seater. Bishop, in the lead of his command, swept down. Blue Nose flashed to the attack. The two planes twisted, swerved and darted and fired at each other. A long fight is seldom a

decisive fight. Most planes were brought down by sudden swift attacks and short bursts of fire. The German slipped away and Bishop was 'fed-up.' In the mean time his squadron had vanished.

'Great luck!' thought Bishop. 'Now I'll buzz off on my own for a bit.'

Convoy flying bored him anyhow. Hah! Five Boches over there. He must look into that. The group of three were nearest and he made for them. But Bishop had been ambushed before, so he also kept one eye peeled in reverse lest an enemy pursuit circus dart out of a cloud. The two-seaters ran. Even five to one wasn't good enough for them. But Bishop gained, and as he caught up, the first three opened fire with the other two still some distance away. The cool Canadian held his fire until within twenty yards. He could see the face of the observer, a face dead white with fear. Now a rattle came from the blue-nosed pursuer, spitting between the blades of the whirling propeller. The bright-hued plane fluttered and went down like a stricken harlequin. Bishop watched it plunge to the earth a tangled mass of wreckage.

Meanwhile the other two came up from below to get revenge, and at the same moment four fast German scouts shot out of the clouds above. It was an ambush all right, but Bishop's headlong chase had caused the plot to misfire, for he had already caught one of their decoy planes and

polished it off. Nevertheless the trap was about to be sprung on the Canadian ace. Against four scouts and four two-seaters what chance had a lone pilot? Quick as a flash he swerved, his machine gun sputtered, and another two-seater went down in flames. Number two.

As the four red scouts closed in on him, Bishop darted straight at one as though bent on headlong collision. The German swerved. Bishop plunged into a cloud, dropped several thousand feet in a spin, and slipped off home.

But here is Abbéville up ahead, and on beyond we catch our first glimpse of the Channel. According to our map we are to cross at Cape Griz Nez, but of course that depends on the weather and the mood of the pilot. He can be just as temperamental about the route as he likes. If he wearies of crossing via Boulogne, he can swing north a mile or two and watch Calais flash by. Or, if he prefers a look at Dunkirk for a change, he can cross the Channel from there. It matters not to his superiors so long as he gets to Croydon on schedule and doesn't do too much joy-riding.

As we pass over Abbéville we climb to two thousand feet and then follow the coast by way of Le Touquet, Étaples, Hardelot, and Boulogne to Griz Nez. The Channel seems perfectly calm this evening, but upon looking down a bit more intently we notice that it is flecked with foam, so

it may be quite boisterous enough to make life miserable for the poor folks on the deck of that ferry just putting out from Calais.

I wonder how many air travelers who make this hop between London and Paris are aware that man's first great air voyage was across this same historic stretch of water? It seems like a grasshopper's jump now, for we make it from Griz Nez to the chalk cliffs at Dover in fifteen minutes. It was in 1909 that the first flight was made across here. It was the sensation of the day, and had all of the qualities of a thrilling event. To begin with it was a competition. Two airmen were trying to beat each other to it, just as in the recent trans-Atlantic flights. One was Hubert Latham, a Frenchman of English descent and a pioneer of aviation. The other was Louis Blériot. Latham was the first off. He headed from the French coast for Dover on the 19th of July. The weather was perfect and his Antoinette monoplane went along smoothly until he was nearly halfway across the Channel. Then his motor stopped dead. There was nothing for Latham to do except glide onto the surface of the water, which he did. A destroyer had been assigned to follow him to intervene in such an emergency. When the boat drew up, it found the monoplane floating easily on its wings and Latham calmly smoking a cigarette and trying to keep his feet out of the water.

This failure only tightened the race. Latham's monoplane was wrecked during the process of getting it out of the water, but the Antoinette Company hurried another to the aviator for a second attempt. Blériot with his monoplane was now on the scene, ready to take off. Both pilots waited for favorable weather. A stiff wind had blown up, and in those days aviators usually waited for days of dead calm. Sunday, July 25th, broke with a lively breeze blowing, and nobody imagined that a flight could take place. Blériot, however, eager to beat Latham to the prize, determined to make the attempt. There was a dramatic moment. Just before starting his motor, Blériot stood up in his plane and stared out over the Channel.

'Where is Dover?' he demanded.

A friend pointed out the approximate direction.

The monoplane took off, cleared some telegraph wires, and sped out across the water. The wind was strong enough to set the white caps running. In a few moments the plane passed out of view of the watchers on shore and also of the destroyer which was following. It had been agreed that if Blériot got out of sight of the boat, he would circle until it caught up with him. For if he had to come down it was certain that his plane would immediately break up in the sea that was running. The pilot would have been in great danger. He had with him an inflated bag which

would help him to float in the sea, but, on the other hand, he had had an accident a short while previously and had burned his foot badly with gasoline. However, when he did lose sight of the destroyer, Blériot kept his way straight across. The wind was increasing, and if it blew up any more he would not be able to fly at all.

The English coast was in sight now, but where was Dover? Blériot had kept in the right direction, but a cross-wind had blown him considerably to the east. It had been arranged that he should land on Shakespeare Cliff, near Dover. He got over the city all right, but the wind was coming in gusts, tossing him about like a leaf.

Our giant Handley-Page is approaching the English coast now. We are crossing over the cliffs about midway between Folkestone and Dover. Both are in plain sight, and down there on the right is Dover Castle. It was on that grassy hillside, about a hundred yards from the castle, that Blériot came to earth. Aside from a cracked chassis and a splintered propeller, no harm was done. A concrete design in the shape of a little monoplane marks the spot.

A facetious bystander remarked to the little black-mustached Frenchman:

'This machine may fly all right, but what use is it?'

'Of what use is a baby?' replied Blériot.

Eighteen years have gone by and the infant

has grown up. Day in and day out at least a score of these giant planes wing their way back and forth across the Channel with an even higher record for regularity and punctuality than the ferryboats that are buffeted by these choppy waves where the waters of the North Sea and the great Atlantic come together.

The mere thought of the strides made in this flying game since Blériot first jumped the Channel in 1909 tempts one to reckless prophecy. Planes are becoming safer every year. Many designers are coming to all-metal construction, washing out wood and fabric. The single-engined liner of the air, made comparatively safe by the establishment of emergency landing-fields all along the route, is giving way to the multi-motored plane which is far more certain to remain in the air. But what if the pilot should suddenly fall ill or have a stroke of apoplexy, you ask? Even this emergency is provided for. The mechanic who sits out in the cockpit is now a pilot too.

But what of the future? Mr. H. G. Wells has complained that the air services are 'unpunctual, untrustworthy, and inconsiderate.' We have found them quite the opposite. The planes in which we have flown have moved off to the dot more often than the trains we used on previous jaunts in Europe. Instead of arriving late, we have more often been a few minutes ahead of

time, sometimes as much as a half-hour. As for being inconsiderate, we have had far less trouble and delay with customs and passport officials than ever before. Aerodrome officials who knew nothing of our reasons for flying have gone far out of their way to be accommodating. For instance, there was the Dutch official at Amsterdam who invited all of the passengers to the aerodrome restaurant for refreshments at his own expense. There was the managing director of the Royal Dutch Air Line who drove an American lady halfway across Holland because she had thought she was going to land at Rotterdam instead of Amsterdam. There was the Austrian pilot who would tip clear over on one side and nearly do a barrel roll every time we passed something interesting that happened to be directly below. There were the British and French pilots who invited us to join them out in the cockpit, and the German ex-war birds who would spend many minutes going over their maps with us so that we should be familiar with the route.

But on the other hand, we too have landed on soggy, muddy, bumpy aerodromes and stood on our nose. We have flown out of sight of land behind a single motor — in a *land* plane. We have had oil thrown back in our faces and we have been deucedly uncomfortable at times.

But every aeronautical expert with whom I have come in contact or of whom I have heard

seems to think that progress in aviation will be as rapid during the next twenty years as it has been during the past twenty. If this be true, then we shall soon see planes that will go beyond our dreams in providing safety, comfort, and speed. In the mean time we should far rather fly than travel by any other means of transport — provided the weather is favorable.

Aerodromes will be made as inviting as the Grand Central Railway Terminal. Aërial motors will be made so much more efficient that it will be a simple matter to attain high speeds — double, yea, treble what airplanes make to-day. The present long take-off over a bumpy aerodrome, which causes the passenger's heart to leap into his throat while he wonders whether the plane is going to make it, will be eliminated and you will shoot right off into space from the building where you board your aërial Pullman. Cabins will be made as comfortable as a corner nook in a Fifth Avenue club, more comfortable than either train or automobile. Noise and vibration will be eliminated. Passengers will be able to converse with their families and their offices by wireless telephone while in full flight. Machines that will be a combination of automobile and airplane will be devised, and we shall be able to stay on the ground and speed along highways when we desire, or jump fences, fields, rivers, and mountains if we feel in the mood to take wing. Why not?

Perhaps the flivver of the future will be amphibian, too!

We spent an evening at a London night club in company with Sir Sefton Brancker, Jane Cowl, and Señor de la Cierva, the Spanish inventor. Señor Cierva is the father of that weird contraption called the Auto Giro. This contrivance has an ordinary airplane body or fuselage, but no wings. Instead of wings there is a small spar or paddle on either side which helps provide lateral balance. In the middle of the fuselage, just in front of the pilot's cockpit, is a column about five feet high, at the top of which is a sort of four-bladed windmill affair. This is put in rotation by pulling on a rope much as you would spin a top. In the nose of the fuselage is the ordinary airplane engine and propeller. Before taking off, the windmill is set in motion. This enables the pilot to rise into the air with a steep climb, a climb that is the next thing to vertical. And the uncanny thing 'will land on a pocket handkerchief.' The experiments with the Auto Giro have been successful. Companies in many countries have bought the rights and are secretly engaged in perfecting it. The inventor told us that he was confident that his Auto Giro would be used everywhere within a few years, and that any person, including children, will be able to fly them without the least trouble. Fantastic, you say? But this is not a dream on paper. The Auto Giro flies,

and the British Government is building a considerable number of them. Captain F. T. Courtney, the famous test flier, has piloted one many times. On one occasion a newspaper was spread on the ground, and when he attempted to alight on it he missed by only a few yards.

Seven P.M. We have dropped down to seven hundred feet now and are bowling along over the lovely rolling fields between the Channel and the outskirts of London. By craning our necks we can see the speedometer on the instrument board out in the cockpit and the needle is swinging between a hundred and ten and a hundred and twenty miles an hour. The pilot seems to be in a hurry.

Seven-twenty. Passing over the little town of Tunbridge. We have dropped to five hundred feet now, and just ahead is the control tower from the foot of which we took off on our twenty-five-thousand-mile jaunt across the skies of Europe seven months ago.

Seven-twenty-five. Another great liner, a Handley-Page like this one, is flying along beside us hardly a hundred feet away. It's the incoming plane from Cologne with passengers from Denmark, Sweden, Finland, Germany, Russia, and other points east. Coming toward us, several hundred feet higher, is the evening Fokker bound for Amsterdam.

Seven-thirty. 'Croydon! All out for London!'

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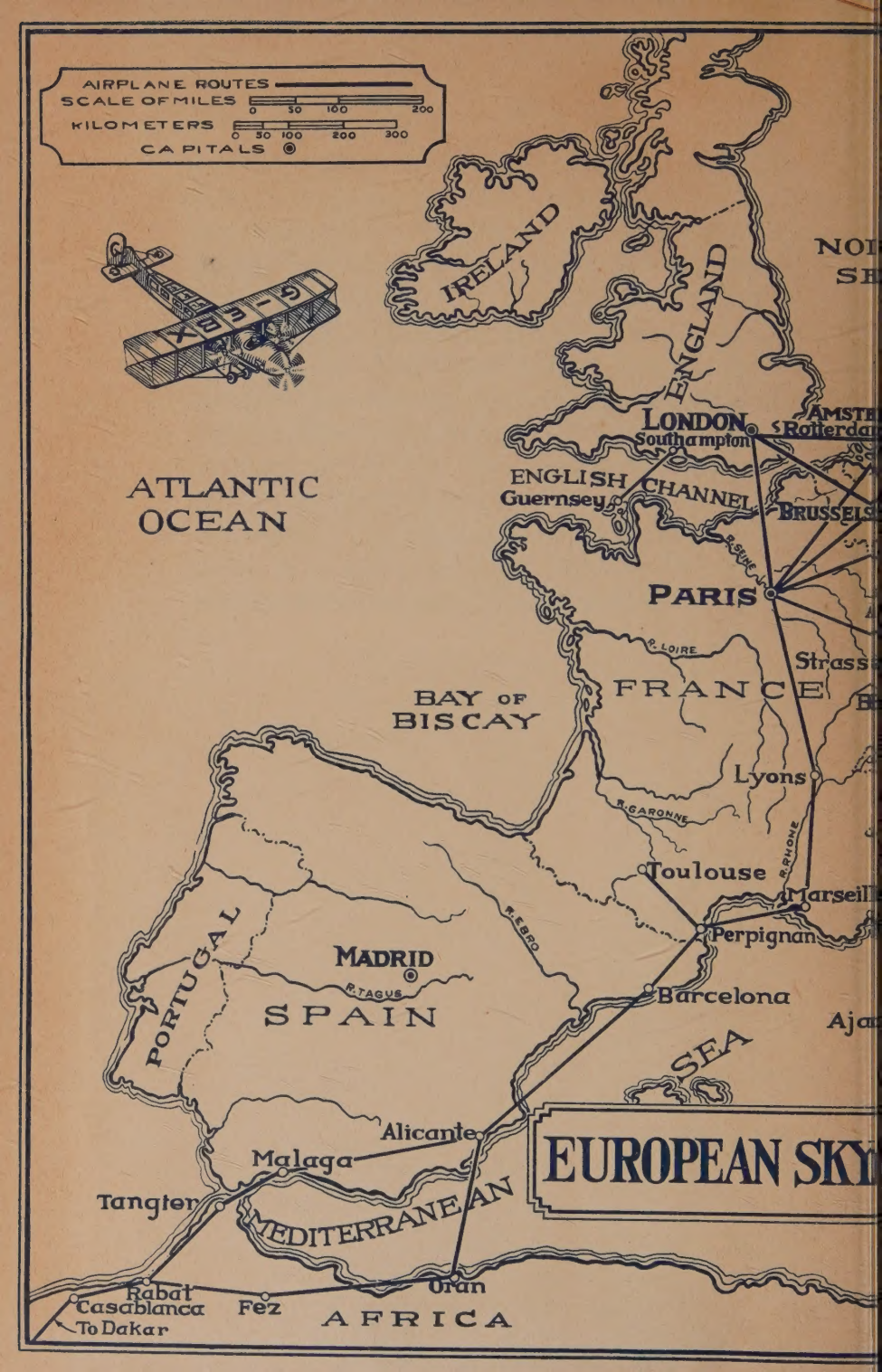
AIRPLANE ROUTES
SCALE OF MILES
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KILOMETERS
0 50 100 200 300
CAPITALS
G-EBBX
IRELAND
ENGLAND
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Southampton
Rotterdam
ENGLISH CHANNEL
Guernsey
BRUSSELS
R. SEINE
PARIS
R. LOIRE
FRANCE
BAY OF BISCAY
Lyons
R. GARONNE
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Toulouse
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Rabat
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To Dakar
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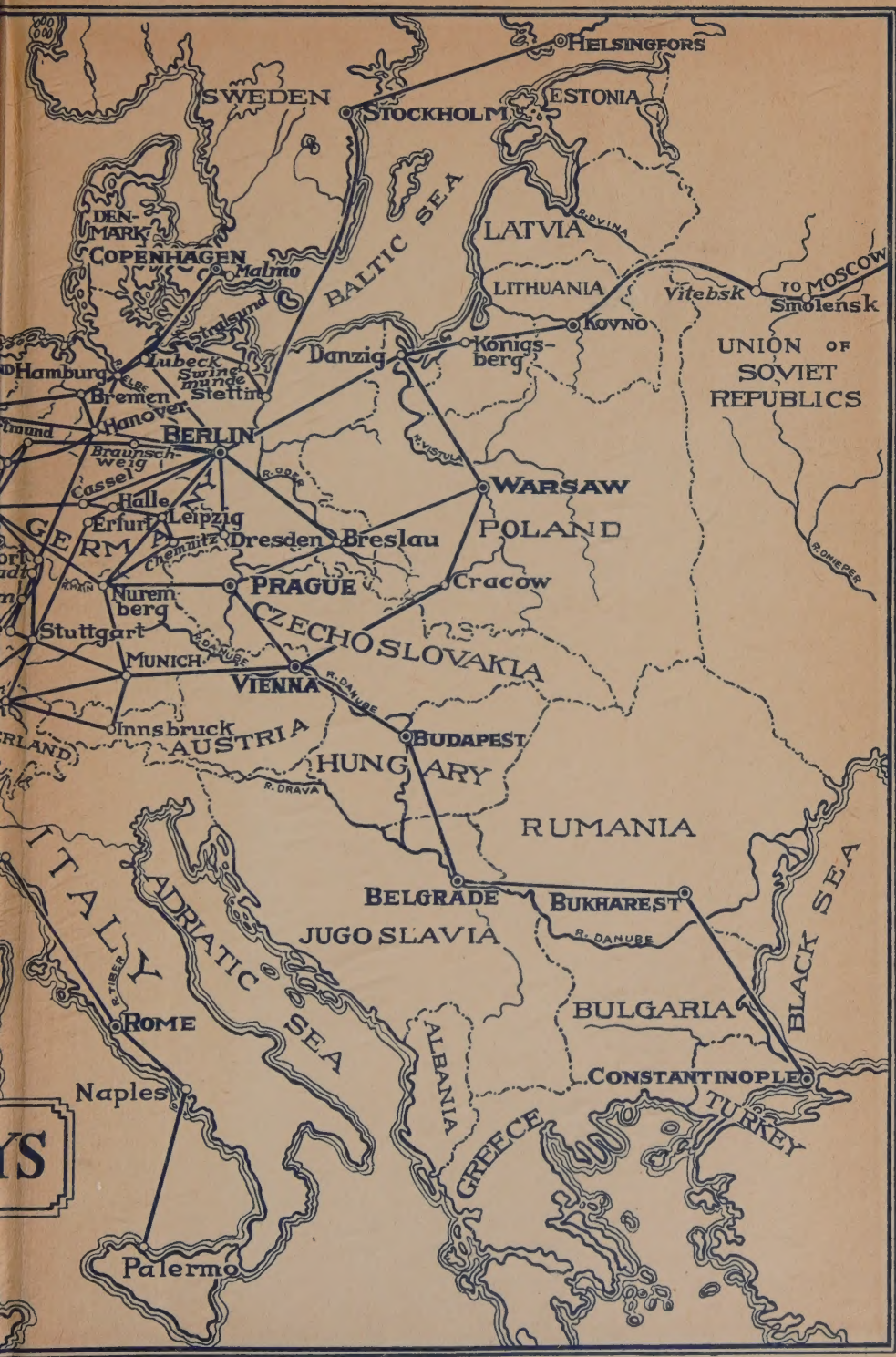
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Vitebsk
TO MOSCOW
Smolensk
KOVNO
Stralsund
Lubeck
Swine-munde
Stettin
Danzig
Konigs-berg
UNION OF SOVIET REPUBLICS
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